MARCH 16, 1957
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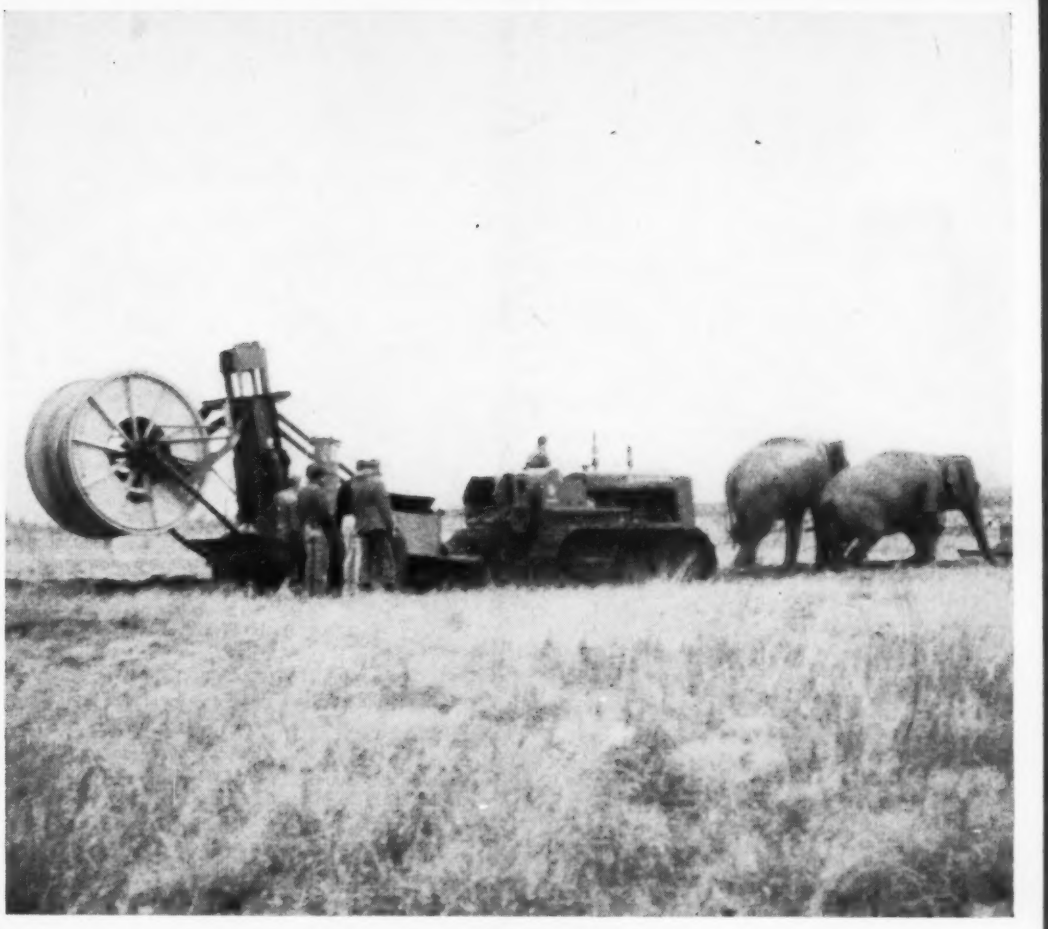
Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY



ELSIE AND DIXIE

Two circus elephants halt exercise maneuvers near their winter quarters in Oklahoma to rescue a "mud-stuck" cable train of Southwestern Bell company while plowing in cable between Guthrie, Okla. and Arkansas City, Ark.

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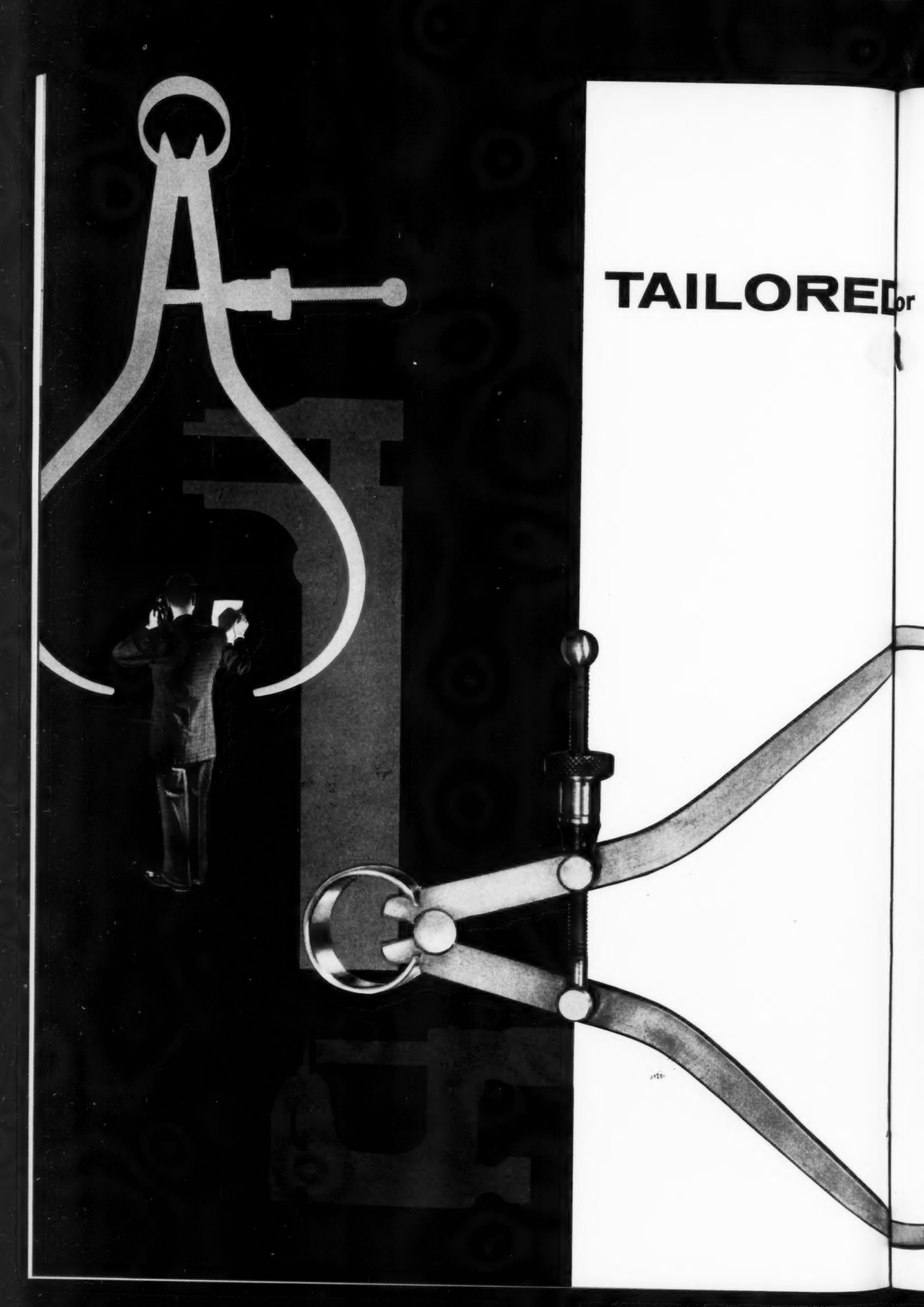
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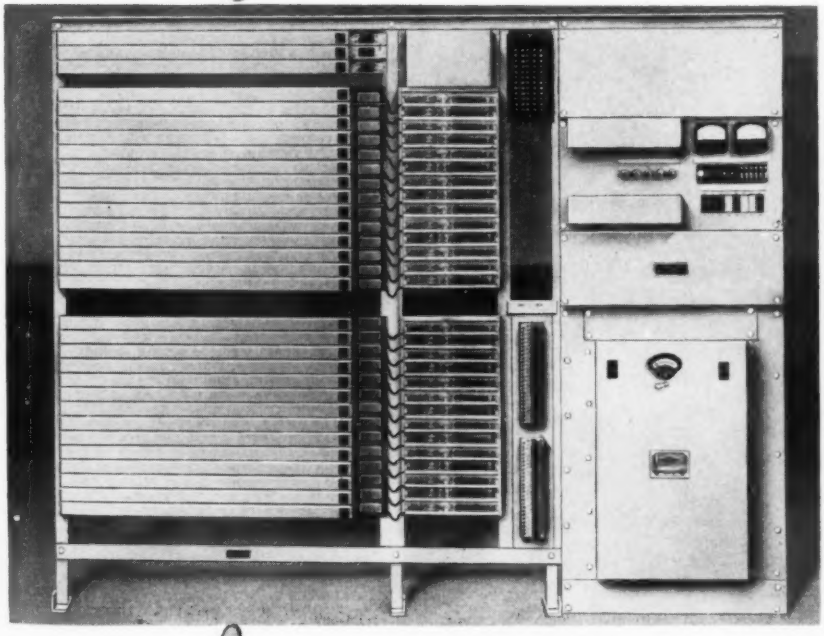

All switching equipment for the F-80 PBX is contained in a single compact equipment bay. Its approximate dimensions are 6 feet high, 7 feet wide, 1 foot deep.

The smartly styled modern cabinet requires no cable turning section. If more than one attendant's position is needed, it is easily installed.

FLASHES AND PLUGS

SHAME ON ROVER. Man's best friend, usually the postman's occupational hazard, turned on a General of California lineman for a change recently, but found the lineman equal to the emergency.

J. R. Garman, coming down off a pole in San Bernardino, was met at the bottom by a nipping dog who refused to be put off by a few well-aimed kicks made in the interests of self-protection. The lineman had to retreat to the telephone pole, where he took up a vigil, as the first dog was joined by a second who came along to reinforce the battle line.

The lineman had the last word, though. When further attempts at shooing failed, he climbed higher, plugged into the telephone wires and SOS'd the sheriff's office. The dogs fled as the rescue party arrived.

•

ONE EXPLANATION. An Oklahoma woman called her local electric company office on Feb. 25 and complained her bills were too high.

The company checked her meter and wiring and reported nothing wrong.

Two days later, the woman called to apologize, announcing she had discovered the trouble—she had "found a socket without a light bulb in it and the electricity must have leaked there."

•

MEMORY JOG. Out in Burbank, Cal., firemen were busy at a burning home. One of them, looking at the clouds of smoke, exclaimed: "That reminds me!"

He ran to an engine, radioed the dispatcher who radioed police who radioed two prowl car officers who rushed to Fire Station 4. Sure enough, the coffee pot was boiling over.

•

REINCARNATION. "My boy," said the boss, "do you believe in life after death?"

"Yes, sir," said the boy.

"Then that makes everything just fine," the boss went on gently. "About an hour after you left yesterday to bury your grandfather, he came in to see you."

•

BUSINESS EXTENSION. There was a wife, it seems, who had the unfortunate habit of monopolizing the telephone. One time the harassed husband, expecting a business call, waited patiently on the window seat while his wife conversed endlessly.

When a pigeon fluttered down on the window sill, the husband glanced at it hopefully and said, "Any message?"

CHANGE OF ADDRESS

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

March 16, 1957

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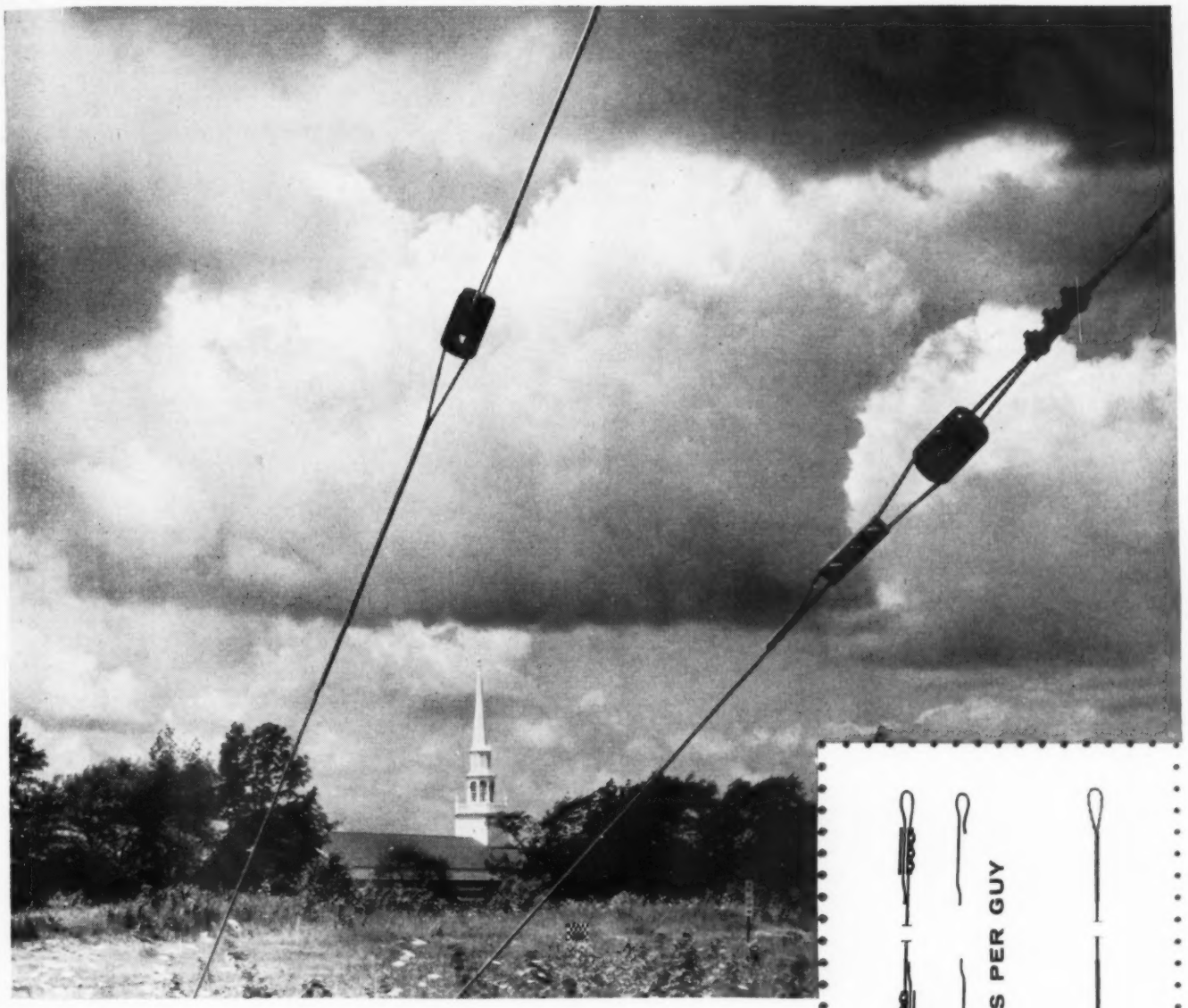

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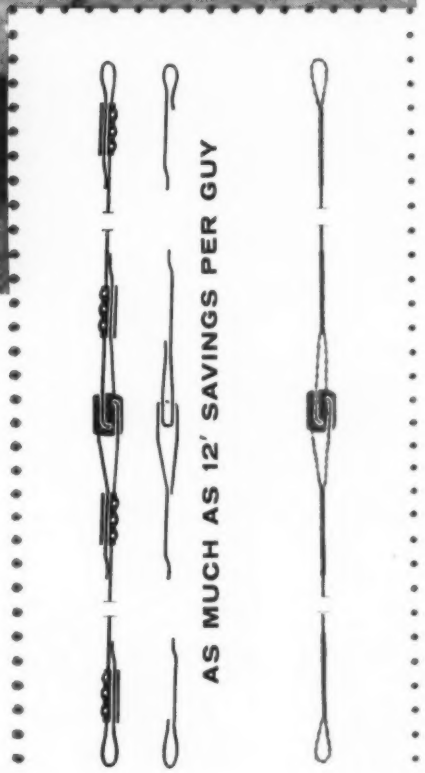

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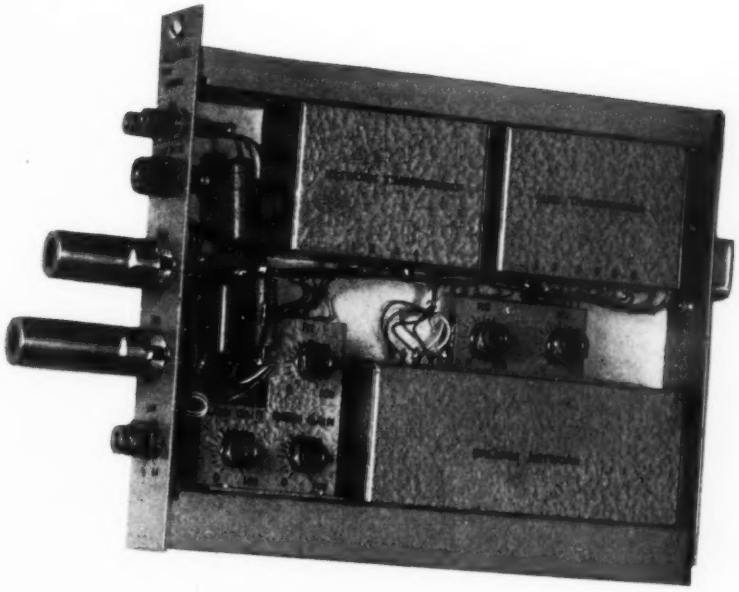

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Z-21 voice frequency repeater

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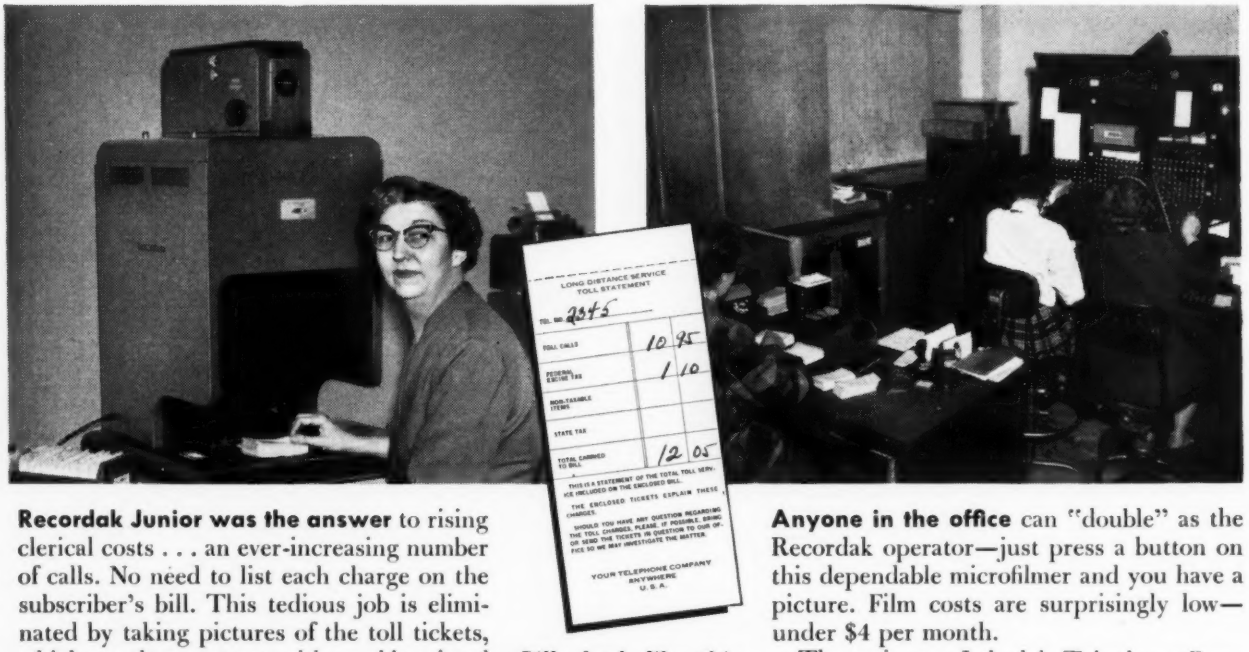
Ends posting 115,000 toll tickets per year ...cuts billing costs 50%

Mr. and Mrs. William Saltmarsh, who manage Lakedale Telephone Company, Annandale, Minnesota, show how a low-cost Recordak Junior Microfilmer quickly paid for itself.


LONG DISTANCE SERVICE
TOLL STATEMENT
2345
10 95
1 10
12 05
THIS IS A STATEMENT OF THE TOTAL TOLL SERVICE INCLUDED ON THE ENCLOSED BILL.
THE ENCLOSED TICKETS EXPLAIN THESE CHARGES.
SHOULD YOU HAVE ANY QUESTION REGARDING THE TOLL CHARGES, PLEASE, IF POSSIBLE, BRING OR SEND THE TICKETS IN QUESTION TO OUR OFFICE SO WE MAY INVESTIGATE THE MATTER.
YOUR TELEPHONE COMPANY
ANYWHERE
U.S.A.

Recordak Junior was the answer to rising clerical costs . . . an ever-increasing number of calls. No need to list each charge on the subscriber's bill. This tedious job is eliminated by taking pictures of the toll tickets, which are then sent out with an abbreviated bill. *Result:* Billing costs are reduced at least 50%. Subscriber questions are more than cut in half. *And no writing errors*—the film records are photographically accurate and complete; are filed at the finger tips—checked whenever needed on reading screen of Recordak Junior Microfilmer.

Bills look like this —only a few figures whether a subscriber makes one toll call or a hundred. Bill and 40 tickets require only three cents postage.

Anyone in the office can "double" as the Recordak operator—just press a button on this dependable microfilmer and you have a picture. Film costs are surprisingly low—under $4 per month.

The savings at Lakedale Telephone Company—with 2,250 subscribers—are typical of those enjoyed by more than 300 independent companies.

You should get the whole story soon—learn how you can buy a Recordak Junior for as little as $550. Low-cost rental plan also available.

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(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to telephone routines

"Recordak" is a trademark
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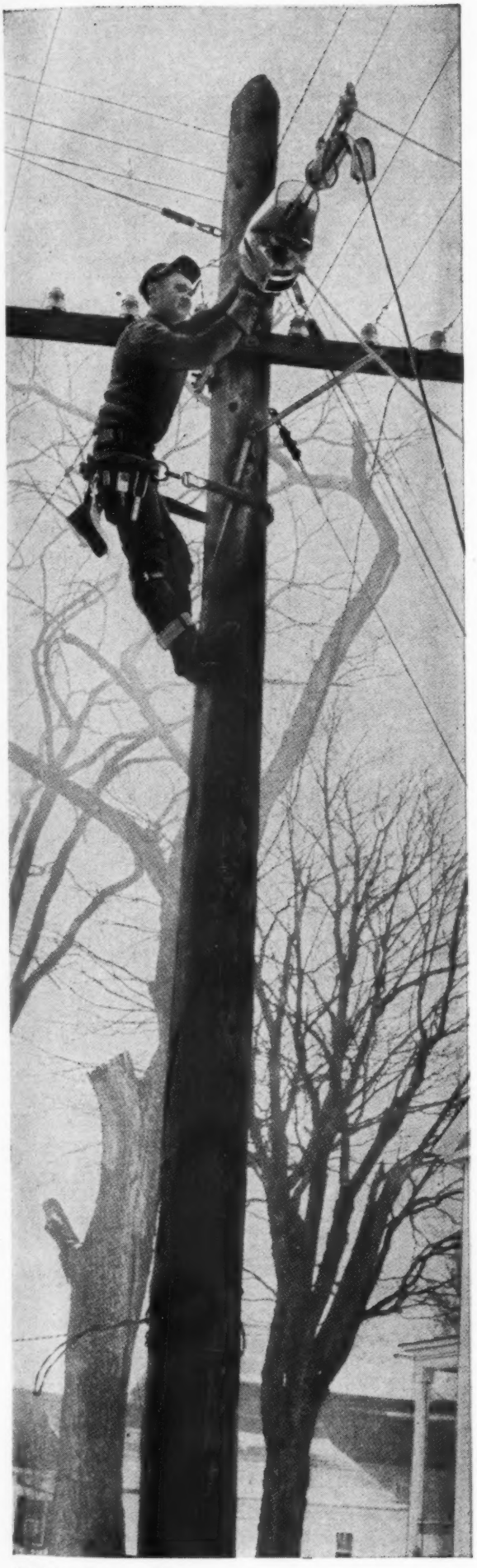

Jacketing of ALATHON® provides superior weather and abrasion resistance

Presently engaged in converting their magneto-type system to an automatic dial operation, the Levant-Kenduskeag Telephone Corp., Levant, Maine, has discovered that exchange area cable jacketed with Du Pont ALATHON can reduce costs, speed installation and increase performance all along the line. Mr. William H. Weppler, president of Levant-Kenduskeag, in giving his reasons for specifying cable jacketed with ALATHON polyethylene resin said, "Since storm damage is reduced to a minimum and snow and ice are no longer a threat to continuous service, maintenance costs are sharply reduced. Cable jacketed with ALATHON is also light and easier to put up, thus installation time is cut. And because a jacket of ALATHON is easy to work, it will facilitate future expansion when needed."

ALATHON polyethylene resins have outstanding moisture and abrasion resistance, remain tough and flexible at extremely low temperatures. Installation is speeded by its ease of pulling, cleanness in handling and simplified jointing and terminating requirements.

Consult with your supplier. He will be happy to explain the advantages of wire and cable constructions utilizing insulation and jacketing of Du Pont ALATHON polyethylene resin for your specific requirements; or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 51316, Nemours Building, Wilmington 98, Delaware.

• Exchange area cable jacketed with Du Pont ALATHON being fed from spool preparatory to start of winding operation. Cable jacketed with ALATHON polyethylene resin speeds installation, reduces costs and provides better protection. *(Cable manufactured by The Rex Corp., West Acton, Mass.)*

There is a difference in polyethylenes...

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polyethylene resin

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BETTER THINGS FOR BETTER LIVING... *THROUGH CHEMISTRY*

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If you would like to tell your customers about the Leich 40A PABX, we'd be glad to send you a catalogue. Write us right away.

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LEICH SALES CORPORATION, 427 WEST RANDOLPH STREET, CHICAGO 6, ILLINOIS

n't have
r-- can
lls myself-- **with a Leich 40A PABX**

"This means we can make our consultation calls faster and easier, Charley. The telephone company people suggested it would be a big improvement.

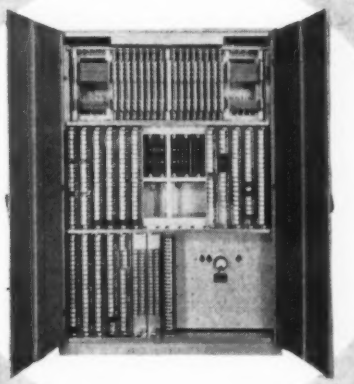
"And it's turned out to be good advice. Here's what I mean.

"When you're talking on a city trunk, calling an inside party without interrupting the city call can be a slow process. This is because some PABX's make you wait for the operator to connect the consultation call. But not with Leich's 40A PABX. All you have to do is push down the handset plunger momentarily.

"Then you receive dial tone and you can dial the inside number you want yourself. When you want to return to the city connection, you just press the handset lever again. Standard Leich telephones without special buttons or equipment are used.

"But the easy consultation feature is just one of the reasons we bought Leich's 40A PABX.

"TAKE A LOOK AT THESE OTHER FEATURES."



A. Key pulsing attendant's turret that's smaller than a typewriter.

B. Dependable, all-relay Leich Dial Switchboard.

C. Capacity of up to 40 telephones with 10 trunks to the main exchange, and 6 local links.

D. Local links are not tied up on extension dialed calls to city trunks.

E. Any inside station may call outside without waiting for attendant.

F. Quick extension of outside calls to any required telephone.

G. Restriction of outside calls if desired.

H. Night answering by any telephone.

I. Inside telephones have two digit numbers.

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The coating is so uniform and the bond so permanent that Copperply can be twisted, bent, flattened, stranded, woven or even roll-threaded without the slightest danger of rupturing the coating or otherwise exposing the core. Thus Copperply's extreme uniformity and permanence mean prolonged service life and maximum protection against rust, regardless of forming or service requirements.

The uses for this unique new wire are many. They range from high strength communications line and electronic applications to wire for non-rust masonry ties and decorative jewelry chain—*wherever* the combined qualities of copper and steel can work to advantage.

Name the use you have in mind and let National-Standard help you work out details. It's part of our unusual service.

NATIONAL NS NATIONAL-STANDARD Company NILES, MICHIGAN **STANDARD**

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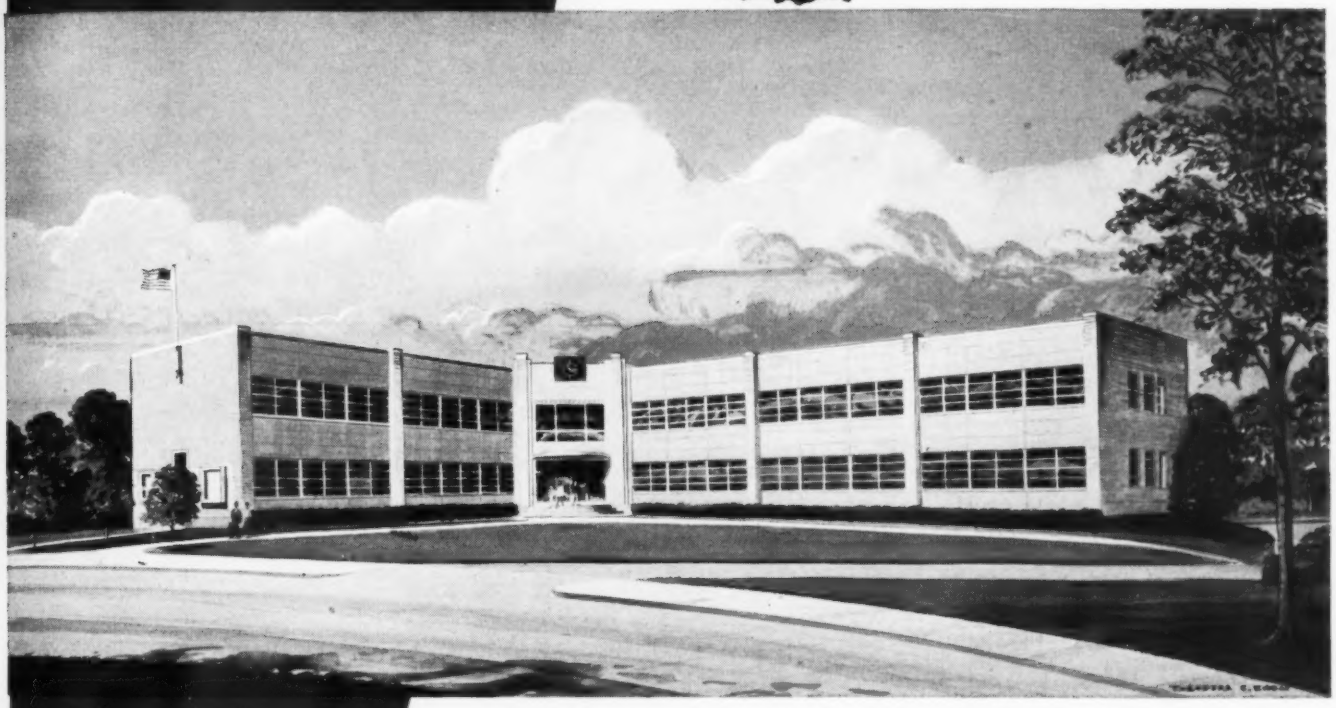

THAT TREES BUILT

When a company builds a new home office it frequently is asked what factors have been most prominent in its achievements. In our case we owe much of our steady progress to the enthusiasm of thousands of clients both past and present whose loyalty and friendship we value so highly and to the skill and ability of the men and women who have made up the Bartlett organization down through the years. We also take pride in the contribution made by our Research Laboratories. Their continued search for new and better ways to protect shade trees has resulted in many of today's outstanding advances in tree hygiene and preservation. The years ahead, we are sure, will bring forth even greater achievements. We are looking ahead, planning ahead and working ahead so that we shall continue to give those who rely on us the very best in scientific shade tree care both today and tomorrow.

Our new building is more than just a building to us. It is visible approval of the Bartlett Way—the scientific way.

1907–1957 The Bartlett Way 50 years Progress in Scientific Tree Care

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Microwave FOR COMMUNICATIONS TELEMETERING REMOTE CONTROL and VHF CONTROL

a 600-mile microwave system requiring greatest reliability

There's no icing of these microwave dishes—*not even in the snowbound Northwest*—thanks to a newly developed Philco antenna cover, Thermo-Microdome! Complete de-icing . . . a *must* for reliability in any communications system . . . but only one of many features, including diversity, in the microwave installation of the Bonneville Power Administration.

Here are a few of Bonneville's microwave facilities: An extensive telemetering system in Portland, Oregon, control center for the Federal Columbia River generating and transmission system, gives instantaneous readings of voltage, frequency and power produced by five distant dams. Sixteen telemetering channels are carried by a single voice channel for 28 hops—one over 60 miles long. Every station is equipped for ten automatic functions including fault reporting, standby-switching and equipment "status check"!

Philco offers a "complete microwave package": Every item of equipment you may need; experienced system planning; installation and service after the sale. Write Department TE for full details.

Bonneville's custom-built Augspurger microwave station. Durable shelters to house microwave and multiplex equipment, as well as towers, antennas, and reflectors, are available in the Philco product line.

Beside utilities such as the Bonneville Power Administration, Philco has installed extensive systems for leading pipelines, turnpikes, railroads, telephone companies and governmental agencies.

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The flexible neoprene base has integral wire entrance sealing slots and, with its tapered design, closes the cover so snugly that it is truly weather-tight and insect tight.

Station Protection–A New Design

Only the fuses and the discharge blocks remain unchanged–performance and dependability continues as before. There is a phenolic fuse mount, rather than porcelain–a flexible neoprene base with integral wire entrance sealing slots instead of open wire holes–a fuse mount and terminal post redesign that puts the wiring snugly in place without removing fuses–a fuse mount that can be easily reversed to wire from right or left. All metal parts are either bronze, aluminum or stainless steel.

Reliable's new Series 2000 Station Protector replaces the Series 1000 with design changes only–changes that are good for the Telephone Plant.

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RELIABLE ELECTRIC COMPANY CHICAGO

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Hamil keys address before NRECA to the future of REA. In spite of political parties' play to give small business tax relief, President's big 71.8-billion-dollar budget makes such reduction unlikely. Appointment of career judges to U. S. Supreme Court should be welcomed by utility industry.

IT WAS a forward-looking address which the REA Administrator, David Hamil, made at the 15th annual meeting of the National Rural Electric Co-operative Association (NRECA) in Chicago in early March. Unlike some of the hackneyed anti-utility bombast which some of the war horses continue to repeat at such co-op meetings, Administrator Hamil keyed his talk entirely to the future of REA. And well he might.

With all but a handful of farms now electrified, and with REA still spending in the order of a quarter of a billion dollars a year, a lot of congressmen are wondering about the future of REA. Leaving aside the rural telephone program, which is admittedly far from finished, questions are being asked as to just what REA is supposed to do, now, to justify such a high rate of annual spending.

Hamil's analysis was realistic. He admitted that the farmers themselves were diminishing in number. He pointed out that farmers now number slightly more than 13 per cent of the population where back in 1910 they made up 35 per cent of the population. But the non-farm population is spreading over into the rural areas and that should make more business for REA borrowers.

Speaking only of the electric load, Hamil said:

"Along with the influx of people to rural areas we are witnessing the growth of rural industry. Some of this represents a flight from the city, some represents local business development. There is every prospect that this will continue.

"These factors in the future market —greater use of electricity by the farmer and the movement of population and industry to rural areas—are what I call 'bonus' factors. They bring new business with little or no effort on your part.

"There are others, however, which call for considerable effort and initiative on your part, and it is these that will determine whether you realize the full potential of your market and insure the security of your business."

Hamil summed up the REA rural telephone program for his NRECA audience briefly as follows:

"In the telephone program, loans were made to provide modern dial service for 188,000 additional rural subscribers. One hundred more Independent companies and cooperatives became REA borrowers. About 330 new automatic exchanges were placed in service and 28,000 miles of line were constructed. The network of telephone lines now in service is nearly 90,000 miles. Telephone loans to date will benefit nearly 800,000 rural homes and installations."

Stressing the importance of area development, Hamil attempted to discount the significance of the public versus private power controversy which has bedeviled the REA operations from its very inception. He said:

"There are some who believe that private and public power are completely incompatible — that we must have all of one and none of the other.

"As I see it, there's a place—today and tomorrow—for both private and public power with cooperatives taking their proper place as a growing and influential part of private power. Both private and public power will be needed to fill the nation's power job, and each can serve to keep the other member of the power team on its toes."

Administrator Hamil also spoke, during his stay in Chicago, at a contemporaneous meeting of the National Telephone Cooperative Association (NTCA). In his talk, he outlined proposed changes in equity and security requirements in making REA rural telephone loans.

Under the proposed changes, commercial telephone companies will be required to provide 10 per cent equity as appraised by REA and raise any new equity funds which may later be required prior to the advance of loan funds. REA would allow an advance on loans where at least 50 per cent of required new equity funds is raised. But where net worth is less than 10 per cent of assets, no payments of dividends or other distribution of net worth will be permitted while new and supplemental loan mortgages are outstanding.

It was pointed out that existing REA borrowers, who have raised 50 per cent or more of required equity funds, can obtain REA advances by accepting a supplemental mortgage restricting dividends and other managerial controls.

The proposed new REA equity requirements are somewhat different with respect to non-profit co-op borrowers. They will be required to have at least 70 per cent of their subscribers signed up on a five-year basis or collect $10 for each unsigned applicant for service. As in the case of commercial company borrowers, co-ops will have to accept mortgage controls where their net worth sinks below 10 per cent of assets. No effective date has yet been set for putting the proposed changes into operation.

(For official Rural Electrification Administration release outlining the proposed changes in equity and security requirements for rural telephone loans, see page 55.)

Corporate Tax Squeeze

Both political parties made quite a play for so-called "small business" relief during the presidential campaign.

XUM

The relief was supposed to take the form of tax reduction. But, with President Eisenhower's thumping big 71.8-billion-dollar Budget now before Congress, there is mighty little chance of any real tax reduction, across the board, for either business or personal income.

And, so the congressmen who want to do something about helping small business must, at the same time, plan to offset any loss of tax revenue by making a corresponding tax increase somewhere else. At least they must do so if they expect to get anywhere.

This creates a danger, and a very real danger, that the business community, as a whole, can be seriously damaged under the camouflage of helping small business. Senator Fulbright (D., Ark.) has offered an amendment to the tax law in the Senate which seems to this correspondent to amount to a small crumb of tax relief, for some very small corporate taxpayers, while at the same time imposing a far greater burden of a tax increase on many really substantial corporate enterprises. Inasmuch as Senator Fulbright's bill (S. 150) has been co-sponsored by 32 senators, it will be seen that it carries quite a substantial wing of the Senate in the form of declared support. There are only 96 senators, which means that Senator Fulbright need make only 17 additional converts among his colleagues in order to command a majority of the upper chamber.

The Fulbright amendment would do two things. Here is the explanation in Senator Fulbright's own words:

"First, it would reduce the federal tax burden on all corporations which have less than $225,000 in taxable income.

"Second, it would increase total federal revenue in an estimated amount of approximately $20 million.

"These effects would be achieved as follows: The normal tax rate on all taxable corporate income would be lowered from 30 per cent to 22 per cent, and the surtax rate on taxable income in excess of $25,000 would be raised from 22 per cent to 31 per cent.

"This adjustment imposes the lower tax rate upon the lower amounts of income and imposes the higher tax rate upon the higher amounts of income."

But, the fact is the tax *increase* would raise the general corporate tax level from the present high rate of 52 per cent to nearly 54 per cent of taxable income. The comparison between the pitiful dribble of tax relief for very small taxpaying corporations and the sharp increase of taxes for corporations with taxable incomes in excess of $225,000 is seen in the following table which Senator Fulbright himself put into the *Congressional Record:*

Income subject to normal tax and surtax	Present tax liability	Proposed tax liability	Change Amount	Change Per Cent
$5,000	$ 1,500	$ 1,100	—$400	—26.7
$10,000	3,000	2,200	—800	—26.7
$15,000	4,500	3,300	—1,200	—26.7
$20,000	6,000	4,400	—1,600	—26.7
$25,000	7,500	5,500	—2,000	—26.7
$50,000	20,500	18,750	—1,750	—8.5
$100,000	46,500	45,250	—1,250	—2.7
$225,000	111,500	111,500	—	—
$500,000	254,500	257,250	+2,750	+1.1
$1,000,000	514,500	522,250	+7,750	+1.5
$10,000,000	5,194,500	5,292,250	+97,750	+1.9
$100,000,000	51,994,500	52,992,250	+997,750	+1.9

How much of a chance does the Fulbright amendment stand? Despite the large platoon of senators (32 in number) who have joined in sponsoring this bill, the chances are not bright. First of all, the administration is opposed to this sort of tax discrimination. And even if the bill did get through Congress, the President would probably veto it. But it will not get through Congress because the bill probably will emerge from the House Ways and Means Committee later this month without an amendment along the lines suggested by Senator Fulbright.

The House Ways and Means Committee has already tentatively approved this year's tax bill and showed no sympathy for the proposed amendment in committee. Over in the Senate the Finance Committee, headed by Senator Byrd (D., Va.), is also hostile to the Fulbright amendment. So that if there is any change to be made, it will have to be made on the floor of the Senate some time between now and Mar. 31, which is the deadline for a new tax bill. A number of Democrats as well as Republicans in the Senate recognize the danger of soaking big business with discriminatory taxes at this time. An increase of 2 per cent in the corporate taxes of all larger industrial corporations could throw the country into an economic slump.

A number of companies would have to either lower dividends or go off a dividend basis entirely. Common stocks and financing would suffer accordingly.

Offers Bound Volumes of Telephony and American Telephone Journal

Laura Force, librarian of General Telephone Laboratories, Inc., 1033 W. Van Buren St., Chicago 7, Ill., has informed us that she has some extra bound volumes of TELEPHONY and its predecessor, *American Telephone Journal*. Readers interested in obtaining any of the volumes may write direct to Miss Force. There would be no charge for the volumes, although of course those interested should expect to bear shipping charges from Chicago.

The following is a list of the volumes offered:

TELEPHONY

Vol. 1—Jan.-June 1901
Vol. 7—Jan.-June 1904
Vol. 8—July-Dec. 1904
Vol. 9—Jan.-June 1905
Vol. 10—July-Dec. 1905
Vol. 11—Jan.-June 1906
Vol. 12—July-Dec. 1906
Vol. 13—Jan.-June 1907
Vol. 14—July-Dec. 1907
Vol. 15—Jan.-June 1908
Vol. 17—Jan.-June 1909
Vol. 18—July-Dec. 1909
Vol. 62—Jan.-June 1912
Vol. 63—July-Dec. 1912
Vol. 64—Jan.-June 1913
Vol. 65—July-Dec. 1913
Vol. 66—Jan.-June 1914
Vol. 67—July-Dec. 1914
Vol. 68—Jan.-June 1915
Vol. 69—July-Dec. 1915
Vol. 70—Jan.-June 1916
Vol. 71—July-Dec. 1916
Vol. 72—Jan.-June 1917
Vol. 79—July-Dec. 1920
Vol. 80—Jan.-June 1921
Vol. 81—July-Dec. 1921

THE AMERICAN TELEPHONE JOURNAL

Vol. 7—Jan.-June 1903
Vol. 7—Jan.-June 1903
Vol. 8—July-Dec. 1903
Vol. 9 & 10—Jan.-Dec. 1904
Vol. *11—Jan.-June 1904
Vol. 11—Jan.-June 1905
Vol. 11—Jan.-June 1905
Vol. 12—July-Dec. 1905
Vol. 12—July-Dec. 1905
Vol. 13—Jan.-June 1906
Vol. 13 & 14—Jan.-Dec. 1906
Vol. 14—July-Dec. 1906
Vol. 15—Jan.-June 1907
Vol. 16—July-Dec. 1907
Vol. 18—Jan.-June 1908

And public utilities, requiring, as they do, ever-increasing funds of new money to finance plant expansion, would really be up against it in the current "tight money" situation of the money market. Clearly the way to help small business is not to wreck all business.

The New Court

Unnoticed in the rivalry of other more spectacular news is the gradual change which is coming over the Supreme Court as a result of appointments by President Eisenhower. With the ascension of Justice Whittaker, Eisenhower has named four judges for the highest benches in little over four years.

Those who will recall the bitter fight in the late thirties over the so-called "court-packing" scheme of the late President Roosevelt to make over the court to his own ideas, will find the comparison interesting. Roosevelt was in the White House nearly seven years before he had an opportunity to make his fourth appointment, and nearly eight years before he finally named a majority of the nine justices.

Eisenhower, on the other hand, is moving much more swiftly towards naming a majority, and the chances are good that he will do it before this year is out. Actuarial possibilities to one side, there is much speculation that either Justice Black (age 71) or Justice Frankfurter (age 74) will retire in the not too distant future.

Justice Frankfurter's recent waspish remark about the great number of "piddling" cases, which his colleagues were agreeing to review, has raised the question of whether Frankfurter himself is becoming fatigued under the work load of the court. It will be recalled that Frankfurter, testifying in favor of Roosevelt's "court-packing" bill, once made some uncomplimentary comments about the quality of judicial performance after age 65, and particularly after age 70.

Of course, justices were much more stubborn about retiring in Roosevelt's day, particularly some of the "nine old men" who viewed with suspicion the drastic reforms of the first New Deal. Again, President Eisenhower's appointments to the court have been far less controversial than Roosevelt's because, with the exception of Chief Justice Warren, Eisenhower has confined his selection to career judges from the lower courts. Roosevelt, on the other hand, especially after he had named Justice Black to the court, was accused by his enemies of being so mad at the court that he was purposely trying to discredit it.

The advantage of naming lower court judges—as Eisenhower has done in his

"IT HAS A TELEPHONE IN EVERY ROOM, TOO!"

appointments of Justices Harlan, Brennan, and Whittaker—is that there is likely to be little opposition to confirmation. If a judge has a worthwhile record in a lower court, it is generally assumed that he will work out all right on the highest bench. Furthermore, a career judge has a record of judicial opinions which pretty well identify his ideas and ability. This is not always the case of nonjurist appointees, taken from political life or elsewhere.

Unlike Roosevelt's appointments to the courts, which were almost entirely left of center, in that period of the New Deal, the Eisenhower appointees have all been middle-of-the-road. That is what one usually expects from career judges. They see enough of life and human controversy, during their experience on the bench, to distrust and eschew the extremes of both left and right. With few exceptions, one rarely finds a radical of either left or right persuasion among the career judges of either the state or federal courts.

What does this mean, with respect to the future direction of the U. S. Supreme Court? If one would lay aside the complicated and emotional problems growing out of the segregation issues, it is likely to mean more reasonable and restrained interpretation in future decisions. And, for the businessman, this should be a heartening prospect.

After Roosevelt got through making the court over to his own image and likeness, there was little doubt that we had a New Deal court. And we still have traces of it. Under this influence, the trend of supreme court decisions since about 1938 has almost invariably been in favor of strong centralized federal government. Any question of power or authority or jurisdiction always seemed to be resolved in favor of *federal* regulation, *federal* controls, *federal* commissions, etc. By the same token, efforts of states to insist on states' rights, or local controls, were weakened and often rejected out of hand by the highest court.

The definition of "interstate commerce" under the Fair Labor Standards Act (Wage-Hour Law) was stressed by court interpretation to include so many local businesses that—like a tired rubber band—"interstate commerce" now seems to embrace just about everything.

When Congress, to take another example, wrote an express provision in the Natural Gas Act, exempting producers and gatherers of gas from the jurisdiction of the Federal Power Commission, the supreme court—then composed of Roosevelt and Truman appointees—rationalized almost to the point of calling black white.

The end result was a decision to the effect that Congress actually *did* intend that producers and gatherers should be subject to the act. And, as a result of that decision, they are still subject to the act, despite two laws passed by two Congresses and vetoes by two Presidents to repeal that decision.

Assuming, therefore, that President Eisenhower will continue his preference for career judges, the future direction of the court should be towards more careful interpretation of congressional action. It should not be necessary in the future for Congress to go around slamming doors after supreme court decisions in order to make sure that its intentions were not being perverted by the highest court. Public utility companies in particular should welcome any evidence of revival of judicial restraint on the highest bench.

In no branch of the law has the majority of the present court been so conspicuously eager to support disciplinary or restrictive actions by the federal government against industrial freedom or business activity, than in the field of public utility regulation. Justice Black's record in cases involving public utility companies is most remarkable; it is perfect. He has never *once* decided in favor of a public utility company, in any case involving a division of the court since he has been sitting on the highest bench. Justice Douglas' record is pretty close to Black's.

With the prospect of a considerable number of utility rate cases and other regulatory matters eventually reaching the U. S. Supreme Court in the near future, the likelihood that more career judges will be sitting there should be welcome news to the utility industry. It does not assure that the utilities will win all these cases. But they might reasonably expect a better break than at any time in two decades.

XUM

C RURAL WIRE

for Aerial Distribution Plant

By A. P. JAHN*

C RURAL WIRE is the Bell System code name for a one-pair wire facility consisting of two parallel conductors insulated with polyethylene and intended for aerial use in rural areas.

C Rural Wire, together with tools, hardware, attachments and requisite handling instructions, was made available to the Bell System in the summer of 1956. Since that time, only about 10 million linear feet of this wire have been used. Field experience in placing this new facility is, therefore, quite limited. Maintenance experience is non-existent.

C Rural Wire is intended principally for aerial distribution plant in rural exchange areas and was produced for use in locations where one or two pairs of open wire on brackets would otherwise be used. Data from trial installations indicate that, although material costs are slightly higher they are largely offset by lower construction costs, and as a result the cost-in-place of this wire is essentially the same as that of an open wire pair.

When C Rural Wire is installed in coastal areas, it offers greatly improved insulation resistance and resistance to corrosion. When used in wooded areas, the amount of tree trimming required will be greatly reduced as compared with that required for open wire.

The wire has physical characteristics such that it can be used in spans of 350, 450 and 600 feet in heavy, medium, and light storm loading areas respectively, as recommended for standard 109H steel line wire. Its electrical characteristics are such that, where carrier transmission is not anticipated, it can generally be used in exchange plant as though it were 19-gauge exchange cable or open wire. A more detailed description of the wire and its important characteristics are as follows:

Construction: This wire consists of two parallel No. 14 AWG (.064 inches) 30 per cent conductivity, extra high strength copper-steel conductors insulated with polyethylene. The polyethylene is an insulating grade compounded for outdoor use, of high molecular weight and with about 2½ per cent carbon black.

The finished wire is flat-oval shaped with semi-circular edges and opposite flat parallel faces as illustrated in *Fig. 1*. A single ridge is molded in the insulation on one edge to provide conductor identification. The dimensions of the flat oval are approximately 0.15 inches x 0.28 inches on the minor and major axes respectively. The separation between conductor centers is approximately 0.140 inches. The thickness of insulation is 0.035 inches minimum.

Breaking Strength: 1,100 pounds (550 pounds per conductor).

Weight: 35 pounds per 1,000 feet.

Packing: The wire is furnished on reels containing 17,000 feet.

Electrical Characteristics: Conductor resistance—17 ohms per 1,000 circuit feet at 68°F; spark test—tested at 7,100 volts, (rms); insulation resistance—minimum 5,000 megohms, 1,000 feet, wet, to ground; mutual capacitance—0.025 uf per 1,000 feet, wet; attenuation—0.30 db per 1,000 circuit feet at 1,000 cps, wet, and breakdown—20,000 volts rms, conductor to conductor or to ground.

*Mr. Jahn is with the Bell Telephone Laboratories. He gave this address at the 1956 Wire and Cable Symposium of the Signal Corps Engineering Laboratories at Asbury Park, N. J.

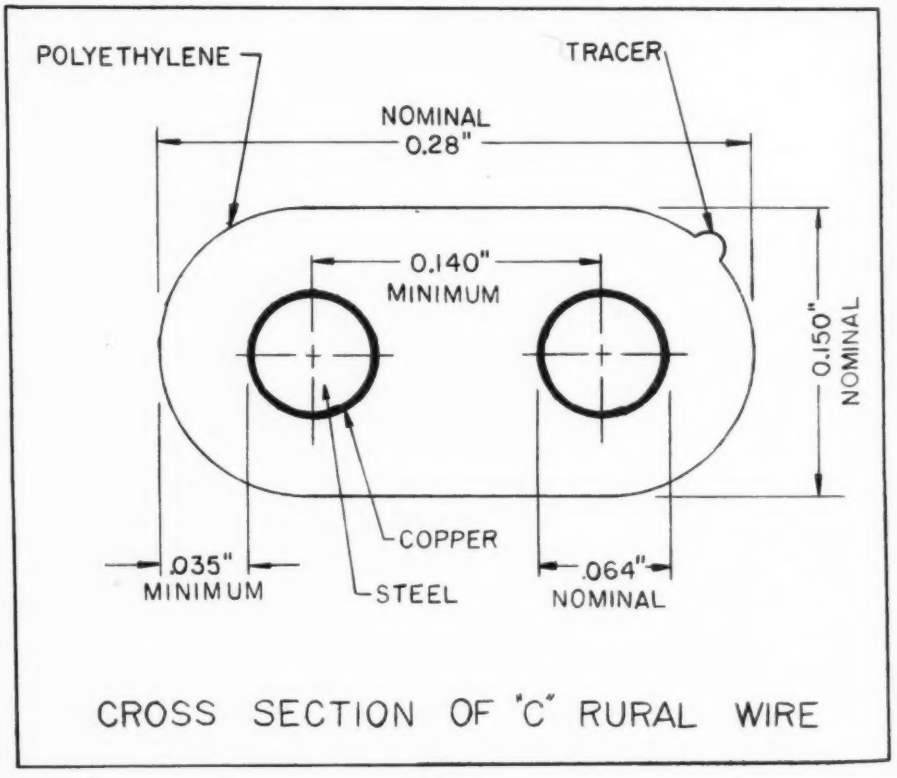


Fig. 1

From a transmission standpoint, at voice frequency, C Rural Wire is comparable to B Rural Wire or when dry to 19-gauge exchange cable. When wet, C Rural Wire is somewhat inferior to the cable and, of course, sheathed cable does not change electrical characteristics with the weather whereas both B Rural and C Rural Wires do change. Where more than one C Rural Wire is on the same pole line the wires should be placed and sagged to maintain at least a three-inch separation in order to meet crosstalk objectives.

Preliminary data at higher frequencies indicate that because of high attenuation, particularly when wet, and because of its large change in attenuation, from dry to wet, C Rural Wire will not be an economic base facility for carrier service. It may, however, be used as links in carrier circuits (in limited lengths up to about 2,000 feet) for special construction purposes such as tree clearance and the like.

The primary and secondary constants, over a frequency range up to 200 kc, for C Rural Wire dry and immersed are shown in the following *Table 1.*

Although the immersed condition is not usually encountered in service installations, it is a handy state for measuring and is readily reproducible. There is some evidence that when the wire is suspended in the air, as in service, a greater attenuation can be expected during rain storms than is shown for the wire in the immersed condition. This difference is not significant at voice frequencies but may be appreciable at carrier frequencies.

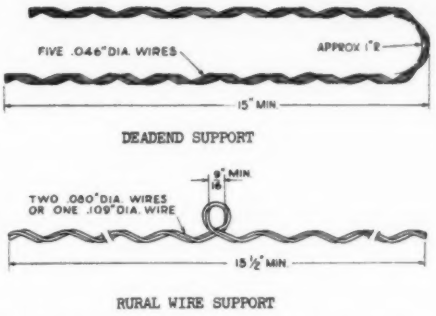


Fig. 2. These neoprene coated corrosion resistant steel wire supports are for use in supporting C Rural Wire. The deadend support is used where a deadend attachment is required. The rural wire support is used at intermediate poles.

For example, at 100 kc the attenuation for the immersed condition is 5.8 db per mile, but when suspended in air during a rain storm, some measurements were made which indicate an attenuation of 8.8 db per mile. If the various exposure conditions are studied a possible explanation for this becomes apparent. The dry structure has the lowest capacitance and conductance because the ground is remote and the dielectric in the ground path consists of polyethylene and air.

When a thin film of water surrounds the suspended wire, a relatively poor dielectric (high power factor and dielectric constant) is introduced in the path to ground.

This raises the direct capacitance and conductance to ground and consequently the mutual capacitance and conductance of the structure.

When completely immersed the large mass of water represents a relatively lower conductance and much higher capacitance in the ground path compared with the thin water film on the suspended structure. This results in a lower mutual conductance and higher capacitance than obtained with the film of water.

Wire of this type of construction, where there is no appreciable adhesion

Electrical Characteristics of C Rural Wire
(Smooth Curve Values 75°F.)

Primary Constants Per Loop-Mile

	DRY				Immersed			
Freq. KC	R (ohms)	L (mh)	C (uf)	G (u mhos)	R (ohms)	L (mh)	C (uf)	G (u mhos)
1	88.70	1.320	.0677	.34	No Change		.1315	0.44
2	90.80	1.270	.0676	.61	Dry to Wet		.1314	1.05
5	94.00	1.182	.0676	1.35			.1314	2.61
10	98.22	1.080	.0676	2.35			.1314	5.59
20	102.00	1.015	.0676	5.20			.1313	11.35
50	110.00	0.969	.0676	13.80			.1312	29.00
75	114.00	0.955	.0676	21.50			.1311	45.00
100	114.92	0.949	.0676	28.69			.1311	63.40
150	117.86	0.948	.0676	44.60			.1310	96.15
200	120.61	0.947	.0676	63.12			.1309	137.03

Secondary Constants Per Loop-Mile

	DRY					Immersed				
Freq. KC	Z_0	a (db/mi)	B (rad/mi)	λ (miles)	V (mi/sec)	Z_0	a (db/mi)	B (rad/mi)	λ (miles)	V (mi/sec)
1	332-j313	1.14	0.14	43.70	43,700	238-j225	1.58	0.20	31.40	31,400
2	249-j208	1.61	0.21	29.00	58,000	179-j150	2.16	0.30	21.14	42,228
5	179-j123	2.33	0.37	16.00	81,000	129-j88	3.18	0.53	11.73	58,650
10	148-j77	2.87	0.63	9.94	99,410	107-j55	3.97	0.88	7.09	70,900
20	130-j45	3.29	1.10	5.30	111,000	93-j33	4.74	1.55	4.05	81,080
50	121-j21	3.95	2.40	2.40	121,500	88-j15	5.40	3.50	1.70	87,000
75	119-j14	4.10	3.70	1.60	123,000	86-j10	5.70	5.20	1.20	88,000
100	119-j11	4.20	5.06	1.24	124,100	85-j8	5.85	7.04	0.89	89,100
150	118-j7	4.35	7.57	0.83	124,455	85-j5	6.02	10.52	0.59	89,400
200	118-j6	4.45	10.07	0.62	124,660	85-j4	6.17	14.00	0.45	89,600

Table 1

XUM

between the insulation and the conductor, requires attachments different from the usual compression clamp. There are available for use with C Rural Wire two types of supports, namely, the deadend support and the rural wire support. Both are preformed wire types made of corrosion resistant steel (430 alloy) and coated with neoprene. These supports are illustrated in *Fig. 2*.

Preparing the ends of C Rural Wire for terminating, or splitting the wire for bridging, presented some problems when only the usual tools, such as pliers, were used. Several different and specialized tools were tried and the Bell System finally standardized on the Model 205 slitter and stripper made by the K. Miller Tool & Manufacturing Co. of Springfield, Mass. This tool is illustrated in *Fig. 3*.

The ease with which this wire can be installed cannot be appreciated unless it has been observed. In the trial installations, the linemen were quite enthusiastic about it. When placed from a moving reel, the wire may be lifted with a wire raising tool and laid over a drive hook. When placed from a stationary reel it may be payed out over drive hooks.

When C Rural Wire is being placed on jointly used poles, or in locations where contact with power wires is possible, precautions such as apply for handling open wire, are taken.

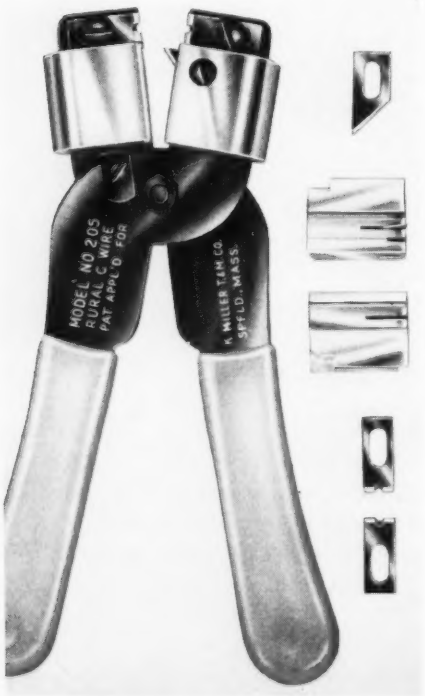


Fig. 3. This slitter and stripper is for making longitudinal cuts in the insulation of parallel types of wire, and for removing insulation from the wire ends after a longitudinal cut is made.

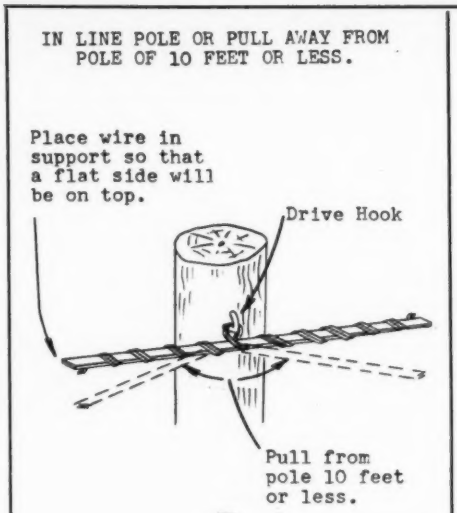

IN LINE POLE OR PULL AWAY FROM POLE OF 10 FEET OR LESS.
Place wire in support so that a flat side will be on top.
Drive Hook
Pull from pole 10 feet or less.

Fig. 4

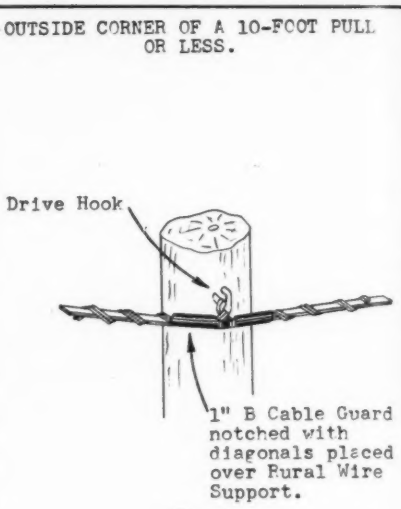


Fig. 5

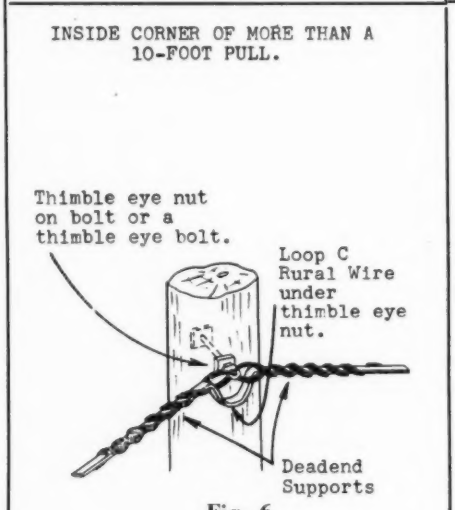

INSIDE CORNER OF MORE THAN A 10-FOOT PULL.
Thimble eye nut on bolt or a thimble eye bolt.
Loop C Rural Wire under thimble eye nut.
Deadend Supports

Fig. 6

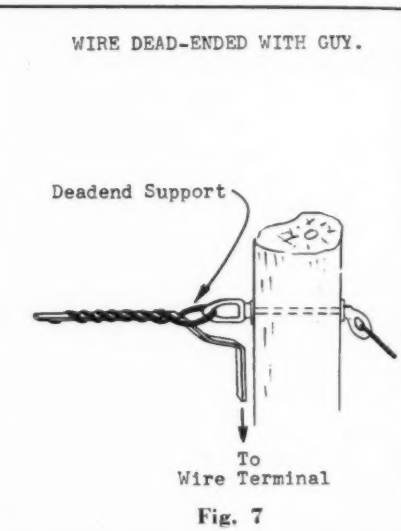


Fig. 7

Objectionable induced voltages during stringing operations may be encountered and it is recommended that the conductors be grounded because grounding will reduce these voltages substantially.

The polyethylene insulation on C Rural Wire has relatively low crushing strength and precautions are, therefore, necessary when placing the wire. Vehicular traffic should not be allowed to pass over the wire. The wire must not be tensioned around corners over drive hooks or other small radius supports.

Where downward grade changes exceed 10 per cent or at corners where the wire pulls against the hook, the wire is supported in snatch blocks during the placing and tensioning operations.

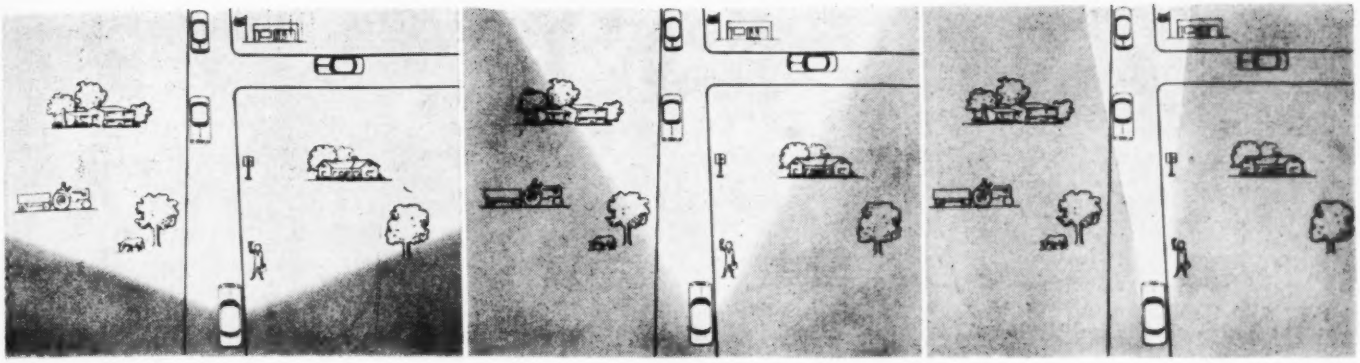
C Rural Wire will resist light abrasion from tree branches and the like, but it is recommended that, if the wire must be placed where it will come in contact with tree branches larger than three-quarters of an inch, tree guards be used. At corners where the wire pulls against the pole, a length of polyethylene cable guard is placed over the wires.

After the wire has been pulled up to proper sag, it is supported at in-line poles, or at wide angle corners by the rural wire support. At sharp corners, double dead ending with the deadend support is required, but the C Rural Wire is not necessarily cut at these points because it can be looped through without difficulty.

Details concerning the use of these attachments are shown in *Figs. 4, 5, 6, and 7*. Before these attachments are secured, it is necessary to introduce at least 10 complete twists into the wire in each span in order to reduce noise from power line induction and to reduce dancing of the wire in high winds. These twists can be placed in two spans at the same time by lifting the line support attachment at the intermediate pole and rotating the wire and support 10 complete turns before replacing it on the drive hook. Dead-ending with the proper support, and terminating in

(Please turn to page 45)

THE ROAD AHEAD—AS YOU SEE IT



MODERATE SPEED FAST VERY FAST

The Narrowing Angle of Driver Vision

This article is reprinted from the *Lincoln Telephone News*. The *News* stated: "A research laboratory in New York known as the Better Vision Institute recently published the results of a study on 'Vision vs. Speed.' We think these facts should be made known to every American who drives a car."

IT IS TO BE assumed that none of our LT&T folk exceed the legal speed limit of 60 miles per hour on the open highway in Nebraska. But, when they are hitting it up at that speed, how well can they see? What if this question were asked of you?

"Why, I can see all right," you say. The road stretches ahead perfectly clear. You spot the cars, trucks, curves and bridges without difficulty.

But what else do you see? It may surprise you to know that the narrow strip of road is just about all you can see traveling at 60 miles per hour.

By making a few simple tests, and thinking about what they mean, you can catch a glimpse of the true function and importance of the eyes in driving a car. The factor of vision has scarcely been touched in the mad search for the causes and prevention of road accidents which killed 40,000 and injured 1½ million Americans during the past year.

Here is the simplest kind of test. At a crossroad is a post bearing half a dozen names of towns, one above the other. How many names can you read at 60 m.p.h? You have remarkably good eyes if you can "grab" even the top one. The others will be a mere blur.

At the next crossing, slow down to 40 and you may be able to read at least two of the names. At 30 you may identify three or four.

That proves that one part of your vision goes to pieces at high speeds. It is the part which includes objects flashing past you at the sides of the road.

It may be that this break-down of vision takes place because the eye, like a camera lens, can't work fast enough to capture a speeding object. Or it may be that the eye registers the image all right, but the brain, which really does our seeing, can't recognize or distinguish the images formed by the eye.

Another way of making this test is to look straight out the side window at the scenery. You seem to see all right. Trees, houses, animals, all are distinct.

But they are distinct because you let your eyes travel backwards with each flying object for a fraction of a second as you fix upon it. That gives time for recognition. If you doubt this, try looking out of the window through a cardboard tube held at right angles to the line of the car's movement. You will see nothing but a confused blur because your eyes cannot dwell anywhere long enough to recognize objects.

When you are jogging along at 20 m.p.h., not only the road is clear, but so are the objects covering a wide range on each side of it as you look straight ahead. But as you step up the speed, the clear area on each side contracts toward the center. At lower speeds you were recognizing objects far to the right and left without shifting your eyes, whereas now you are not recognizing them.

So it turns out that, at high speeds, you are driving through a kind of self-created tunnel; your corner-of-the-eye vision virtually demolished and even your direct vision thrown into confusion when the eyes are turned side-wise on passing objects. None of your seeing ability remains unimpaired except the look straight ahead down the road. Even that may be affected in insidious ways.

Research may some day prove that vision is the key fact in managing a car—see right, and you will drive right. Meanwhile, you should set up a standard for your own safe speed, based on the experiments you have made: when side vision is a blur, step on the brake.

By consulting an eye specialist you can learn whether you have any visual defects that can be corrected with driving glasses. If so, get and wear them. Tinted glasses are preferred for daylight driving, with your prescription "ground in." Ordinary sunglasses are more of a hazard than a help when your vision is faulty.

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

A LONG-TIME FRIEND of your writer, Albert D. Stern, vice president of Devence, Inc., of New York City, visited our office recently and left a little black box for inspection and test.

This box is powered from 110 volts, ac, and has a switch for use in selecting codes from one to 10. When code 4 is selected, for example, and the black box connected to a telephone line, a stepping switch moves one step on each ringing period.

We connected this to our telephone line and called from another line. After we had received the inductive ringback the fourth time we hung up. The mechanism in the black box closed a set of contacts and furnished 110-volt ac power to light a lamp.

The output of the device can be arranged to merely close a switch or to connect the required power necessary to operate the equipment to be controlled.

The possible uses of this little black box appear to be numerous. Code 3, for example, could be used to start the furnace, code 4, to turn on the lights, and 5 to start the electric range so that dinner will be cooked when you arrive home.

Actually, it is possible to control many devices in the home from a distant point by merely dialing the number and waiting until a specified number of rings are heard and then hang up. The little black box will do the rest. We know because we did it.

•

An exciting new look into the future of communications was revealed by Frederick R. Kappel, AT&T company president, in an address before the Economic Club of Chicago last Nov. 15. This speech was all good but the remark that we especially enjoyed was the following:

"Year by year we'll be providing more and more individual lines and relatively fewer party lines. People want lines of their own, they are entitled to have them, and we're going to see to it that they get them."

We have contended for years that party lines should be used only in a few isolated locations where traffic is extremely light. Europe is far ahead of this country in the use of individual lines.

It is a pleasure now to note that the president of AT&T agrees with our contention and that he is going to do something about it.

•

The telephone switchboard in the Nation's Capital in Washington, NA 8-3120, is said to be one of the most important and busiest private branch telephone exchanges in the world. On an average day when Congress is in session, it handles about 60,000 calls.

This is a 50-position switchboard, serving 2,200 lines with five or six extensions on each line. The system provides service for 435 Congressmen and 96 Senators.

•

A new device is now available for use in lieu of lacing cable forms by the old-fashioned lock stitch method. This new arrangement consists of a neat, spirally-cut, clear plastic wrapping that can be applied to any cable up to 2 in. diameter.

This wrap holds the form firm and pairs may be taken out at any desired point on the cable. The wrap also can be removed easily and reused as required.

•

It is reported that fire losses in the United States last year hit an all-time high of over 989 million dollars. It is admitted that we have good fire reporting and protection systems in most towns and cities throughout the country.

Undoubtedly though there are many towns of a fairly large size in Independent territory that do not have a fire or emergency reporting system of any kind.

In these communities the operating telephone company would do well to sell the city fathers on a telephone-type reporting system. Suitable equipment is available from Independent manufacturers and with distribution cable available in all building areas such a system can be installed at a reasonable cost.

The telephone company that promotes the installation of such a system will not only increase its revenue, but will also be performing a worthwhile service for the community.

•

We recently received a number of fine color slides from Mr. Crit L. Woolsey, western representative for Mathias Klein & Sons. Some time ago, after having made a trip to San Francisco, we complained on this page about the weather, i.e., rain, fog and general lack of picture-taking visibility. Crit sent us a note with the slides stating:

"Being a true southern Californian, I should go along with you. But also being sort of on the honest side, I will have to stand up for the northern part of the state. It still needs more rain than it gets, but sometimes shows very poor judgment, and gets our visitors wet."

The color slides were sent us to prove that in rare moments they do have some good weather in San Francisco. We stand convinced.

•

We enjoyed a visit in Washington, D. C., recently with Mr. Hans V. Koenen, export sales manager for Felten & Guilleaume, the oldest cable manufacturer in Germany. We were surprised to learn that the Germans have done considerable experimental work on aluminum-sheathed cables.

There is every reason to believe that

versatile

[fast and economical, too]

Noted for its speed, accuracy and resulting cost savings, the Burroughs Sensimatic can take on any assignment in your accounting system and whip through it on the double.

Secret of this proved mastery is the exclusive sensing panel that makes the Sensimatic the most versatile accounting machine you can buy. Just a flick of the knob gives you a choice of four jobs. And your Sensimatic automatically zips through the chosen procedure, makes decisions and complicated motions *for* the operator, sharply reduces any chance of mistake. To handle more jobs, you just insert another of the interchangeable sensing panels.

Because the Sensimatic is so fast, so error-free, it quickly pays for itself in time and effort saved. And there's no obsolescence. To change your accounting system, you merely change sensing panels. That's all.

For a complete—a *convincing*—demonstration, see the Sensimatic in action at our nearby branch office. Six series, 2 to 19 totals, to choose from. Burroughs Corporation, Detroit 32, Michigan.

Burroughs

"Burroughs" and "Sensimatic"—Reg. TM's.

BURROUGHS SENSIMATIC ACCOUNTING MACHINES

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this type of cable may serve many useful purposes in the future.

•

We learn from the *Southern Telephone News* that the Southwestern Bell Telephone Co. found at the end of the war, a heavy hiring program, plus new developments and equipment in the telephone business, made on-the-job training impractical, if not impossible. The only answer to this tremendous demand for additional skilled plant technicians was classroom training.

The general idea of classroom training was not new to this company. The first schools of this type were conducted in St. Louis prior to the United States' entry into World War II, and proved highly successful.

Houston, Tex., was the first to establish a central training school at the end of the war, then Topeka, and then the idea spread to all areas.

Today, these plant training centers are operated for three purposes:

(1) To equip the newcomer to do the best possible job in quality and production in the shortest time possible.

(2) To teach present employes on all levels the new and improved techniques in communications.

(3) To qualify employes to perform efficiently in higher skills.

The men in the classes are trained as much as possible by the job demonstration method of teaching. They're first shown how to do a job, then they "learn by doing." The equipment at the school is the same as that which they will find now or in the future at their own exchanges. Text books, Bell System Practices, and visual aids help give the men well-rounded training in the classes.

More than 35,000 men, learning 60 to 75 different skills, have gone through these training schools since the program was initiated at the end of 1945. Most of the courses last one to two weeks, though several, like the crossbar equipment classes, range from six to eight months.

Instructors are selected from the workers and they receive pre-instruction training in teaching. They remain as instructors for about four to six months, then usually return to their former jobs.

The experience of this company certainly proves that practical telephone men "learn by doing" in telephone classrooms. Certainly schools of this type will pay big dividends for any operating telephone company, large or small.

Plant Man's QUIZ

By RAY BLAIN, Technical Editorial Director

Q. What is the highest resistance that can be tolerated in a central office ground connection?

A. The office ground of course should always be constructed to provide the lowest possible resistance. In general this ground should never be over 5 ohms.

Resistance tests should be made progressively on metal objects, such as water pipes, building structural steel, and the common neutral multi-ground of the electrical system, until the resistance of the office ground has been lowered to the desired point.

•

Q. Please explain the purpose for installing a short section of fine gauge cable on an exchange cable distribution system.

A. The short section of fine gauge cable is used as fuse protection for the central office.

Conductors in the fine gauge cable have the required impedance to limit current flow over the cable pairs, in case of an accidental power contact. This arrangement has proved more economical than fuse and main frame maintenance.

The fine gauge cable section should be 24 gauge or smaller. It should also be at least 6 feet in length.

Only in extreme cases will the current on the fine gauge cable cause fusing of the conductors. The main frame protectors will safely carry current up to the fusing point of the conductors.

•

Q. Can you please advise us as to the maximum number of subscribers that may be served over one pair of wires by making use of the transistorized subscriber carrier system?

A. We are advised by one manufacturer of this type equipment that it is possible to serve up to 50 subscribers on a single pair of wires in the 12-126 kc frequency range.

These new carrier systems are designed to function with present central office and station equipment.

Q. Will it be possible to obtain an automatic control for use on a portable electric dehumidifier installed in an unattended automatic telephone exchange?

A. There is such a control now on the market for use on portable dehumidifiers of ⅛ hp or less.

This control turns the dehumidifier on, turns it off automatically and maintains the desired humidity level continuously.

Automatic control also holds the humidity level within a narrow range. It eliminates the wide swings that result from the dehumidifier being on or off too long, so common with manual operation.

Then also there's no worry about forgetting to shut the dehumidifier off, when it's controlled automatically.

•

Q. We plan to retranspose four open wire circuits on a line which is 70 miles in length. However, before replacing it, we would like to check its tensile strength as well as test it for transmission. Can you give us any advice as to how this wire may be tested to determine its suitability for reuse?

A. You did not state whether the wire you want to test is galvanized steel or copper. If it is steel, and not rusty or otherwise damaged, we would generally consider it satisfactory for reuse in the manner you indicated.

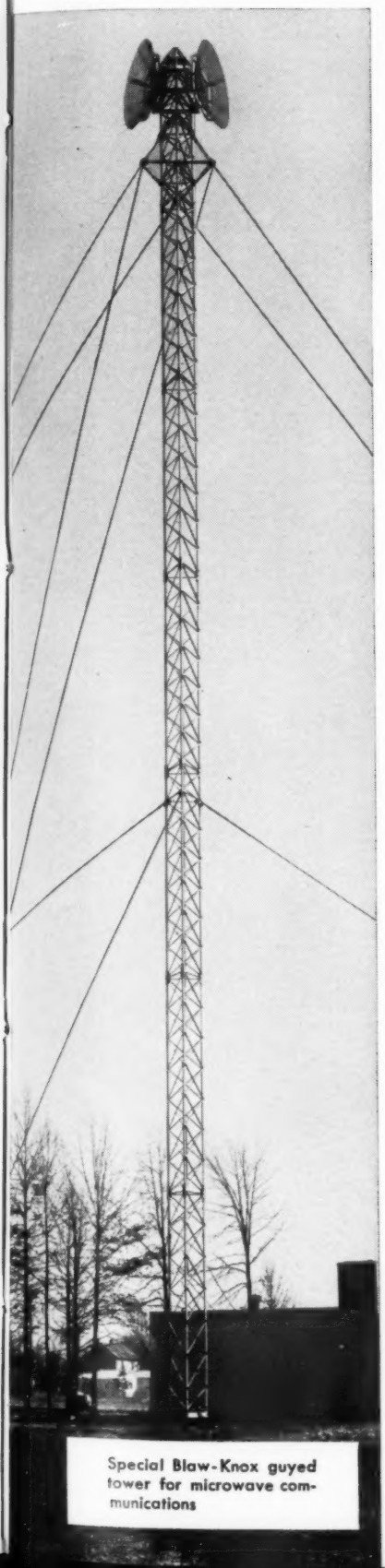
If it is copper and there is no evidence of kinks, cuts, tie burns, etc., then it, likewise, should prove suitable for reuse.

The usual fault found in old wire, both steel and copper, is its defective splices. If the splices are not all made with an approved type of compression sleeve, it is generally considered the best practice to call them all out and make new splices with good compression type sleeves.

If steel galvanized wire is not rusty, and copper wire not nicked or otherwise damaged, we would not question its tensile strength, regardless of its age.

Planning expansion?

Microwave may be the answer ...and Blaw-Knox has the towers



Special Blaw-Knox guyed tower for microwave communications

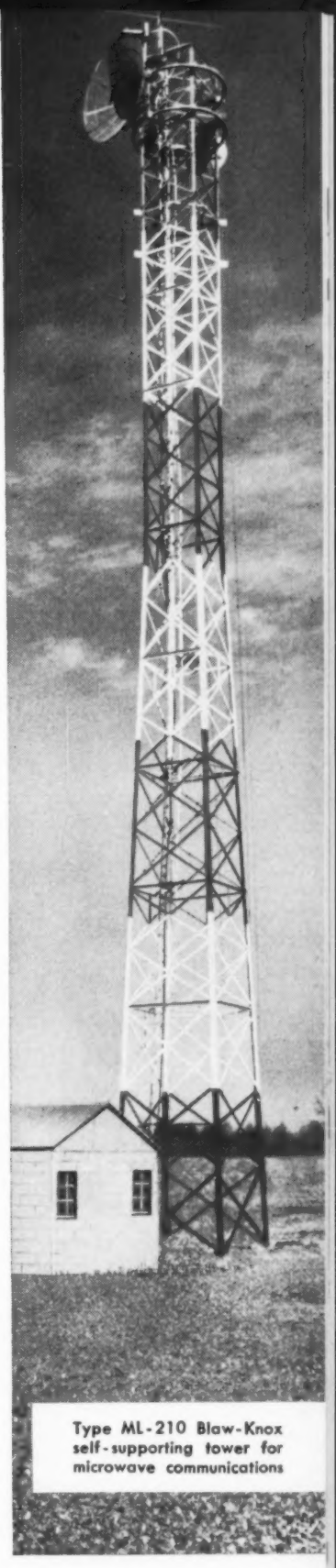
Improved service, reduced maintenance, and economy records of pioneer microwave installations are responsible for many telephone companies plotting additional right-of-ways through the sky. Quite possibly, microwave can best answer your growth problems, and Blaw-Knox can best answer your tower questions.

Blaw-Knox Microwave Tower designs are based on more than 40 years of experience in building towers. For example:

- The first Blaw-Knox Towers, four 300′ self-supporting towers erected over 40 years ago in Alaska, still stand in good service.
- The world's first atom bomb was supported by a Blaw-Knox Tower, ushering in the Atomic Age at Alamogordo, New Mexico, in 1945.
- First electronic contact was made with outer space by a radar signal to the moon, beamed from a Blaw-Knox Tower.

From such varied experience as this, Blaw-Knox engineers are well qualified to design and engineer the type of tower system that will best meet your present and future requirements. Blaw-Knox Microwave Towers meet or surpass government standards and recommendations of the Radio-Electronics-Television Manufacturers Association for safety, wind loading and quality of construction.

Get the full story of Blaw-Knox Tower design, engineering and fabrication services. Write today for your free copy of new Bulletin 2538.



Type ML-210 Blaw-Knox self-supporting tower for microwave communications

BLAW-KNOX

BLAW-KNOX COMPANY
Equipment Division
Pittsburgh 38, Pennsylvania

MICROWAVE TOWERS
Guyed and self-supporting Microwave Towers, custom-built for each installation...and Transmission Towers...Antenna Towers—guyed and self-supporting for AM-FM-TV, Radar... parabolic antennas and other special structures

INDEPENDENT

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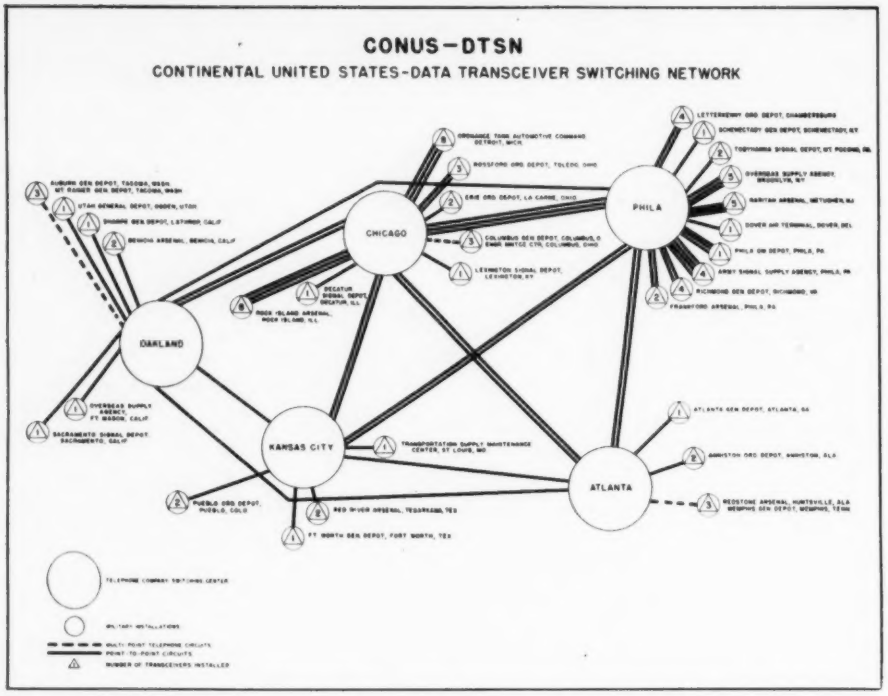


A chart showing the Continental United States-Data Transceiver Switching Network (CONUS-DTSN) developed by the Army Signal Corps and the Long Lines Department of AT&T to speed up the flow of supplies and keep stockpiling to a minimum. The data transceivers used in the network are made by the International Business Machines Corp. and are used to exchange information on punched cards between all network points. There are five telephone switching centers interconnected to 33 military installations.

Telephone Line Network Helps Streamline Army Supply

KEEPING CLOSE control of over a million items of Army equipment—from tanks to transistors—is the challenge facing today's modern U. S. Army.

To relieve this king-size problem, the Army Signal Corps and the Long Lines Department of the American Telephone & Telegraph Co. are today operating a new electronic data processing network, designed to speed up the flow of supplies and keep stockpiling to a minimum.

The system named CONUS-DTSN, for Continental United States—Data Transceiver Switching Network, is the outgrowth of the "fast-communication" concept of Project MASS (Modern Army Supply System).

Telephone lines connect switching centers in Philadelphia, Atlanta, Chicago, Kansas City and Oakland. Interconnected to these centers are 33 military installations. Data transceivers of the International Business Machines Corp. are used to exchange information on punched cards between all network points. Cards punched at one end of a circuit can be duplicated rapidly at the other end using communications lines. An estimated million such transactions can be handled daily.

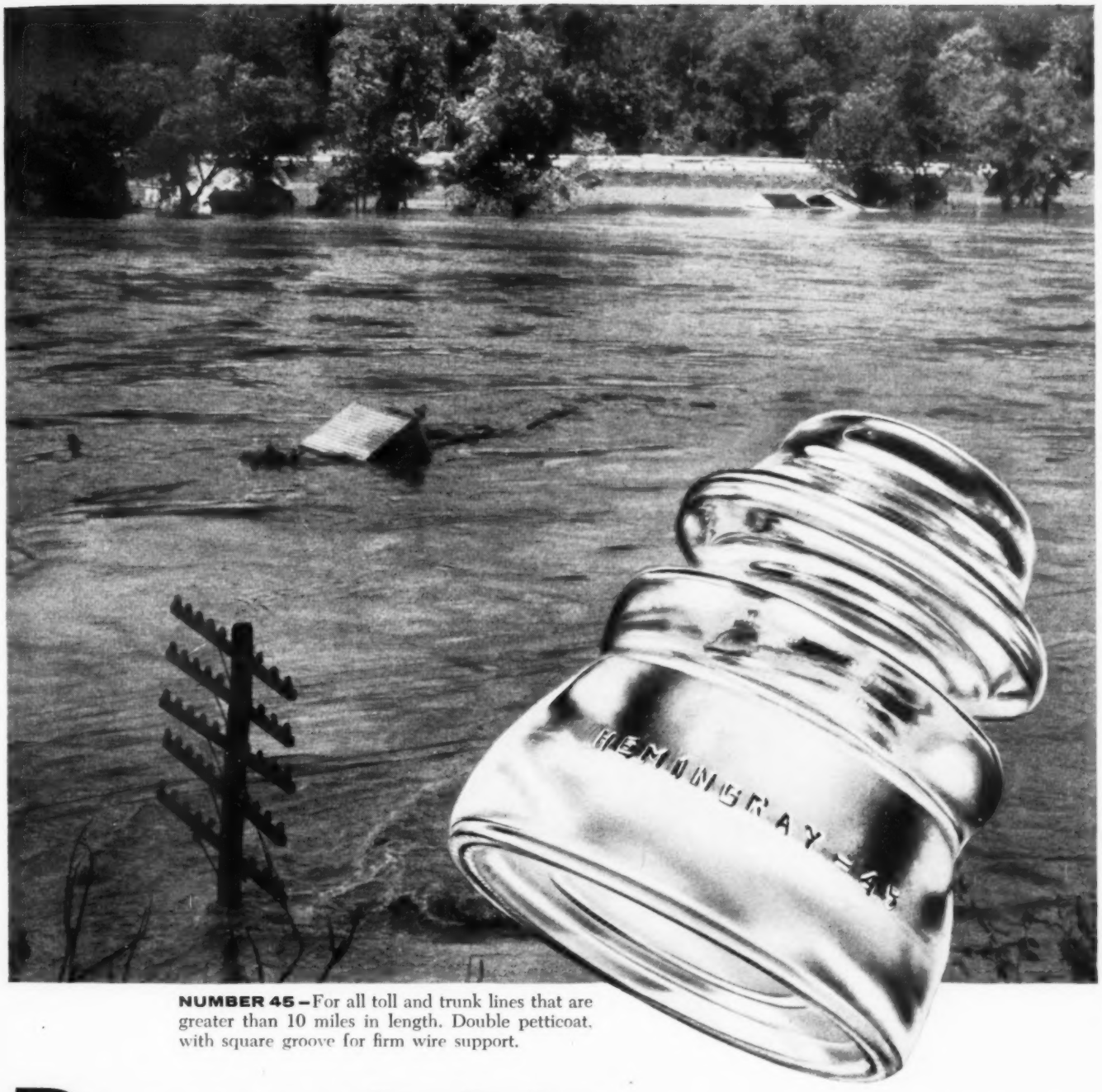
Processing of supply requisitions may be completed in 30 to 40 days less time than now needed. Requisitions which took weeks will be handled in days and those taking days will be trimmed to hours.

Savings are expected through greater over-all efficiency and reduction of the time required to process and transmit information, requests, orders and reports. Further savings will result from the reduction of materials in supply pipelines and amount of materials stocked in depots.

Initial users of the network are Quartermaster, Ordnance, Signal, and Overseas Supply Agency in New York and San Francisco. Future users will include other branches of the Army.

(Please turn to page 32)

WAC Pfc Vivian K. Hudgins at work on transceiver similar to those used in the CONUS-DTSN. The machines, made by IBM, are used to exchange information on punched cards between all network points.—U. S. Army photo.



NUMBER 45—For all toll and trunk lines that are greater than 10 miles in length. Double petticoat, with square groove for firm wire support.

Dependable ...in emergencies

You have to depend on your equipment when rampaging nature puts communications systems to their severest tests.

You *can* depend on Hemingray Glass insulators to stand up under severe conditions and provide the service you need. Strong, uniform high quality Hemingray insulators since 1870 have been the world standard for quality . . . have carried most of the world's overhead telephone and telegraph wires.

Hemingray has pioneered many insulator developments, to keep pace with the requirements of improving communications systems. For prompt delivery of what you need . . . when you need it, you can always depend on Hemingray.

Hemingray Glass insulators are a product of Kimble Glass Company, subsidiary of Owens-Illinois, Toledo 1, Ohio.

HEMINGRAY INSULATORS
AN (I) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO

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New improved T

d TFA headset

available from NORTH!

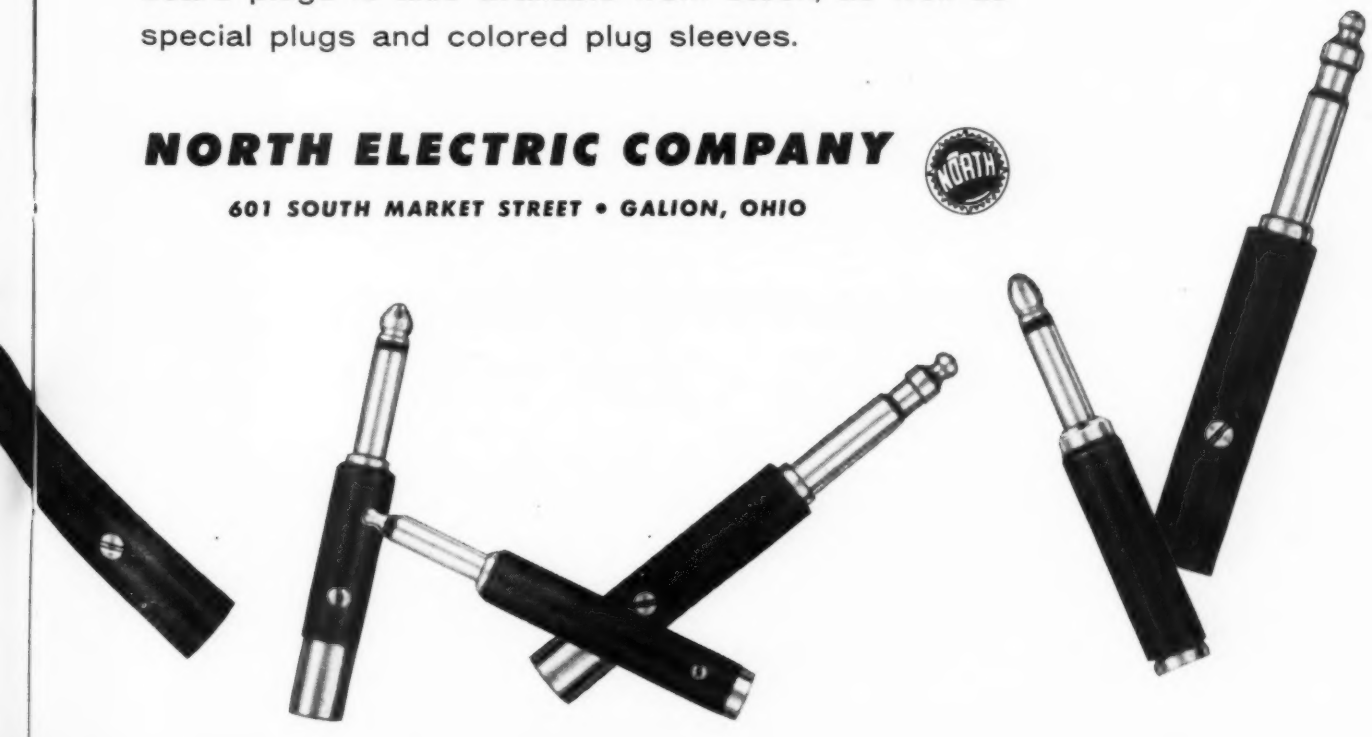
Your requirements for an operator's headset with a high degree of sensitivity, high standards of transmission, operator comfort, and complete flexibility of adjustment can now be fully met with the new improved TFA headset now in stock at North.

Switchboard Plugs on "In Stock" Availability

A full range of 2, 3, and 4-conductor TFA Switchboard plugs is also available from stock, as well as special plugs and colored plug sleeves.

NORTH ELECTRIC COMPANY

601 SOUTH MARKET STREET • GALION, OHIO



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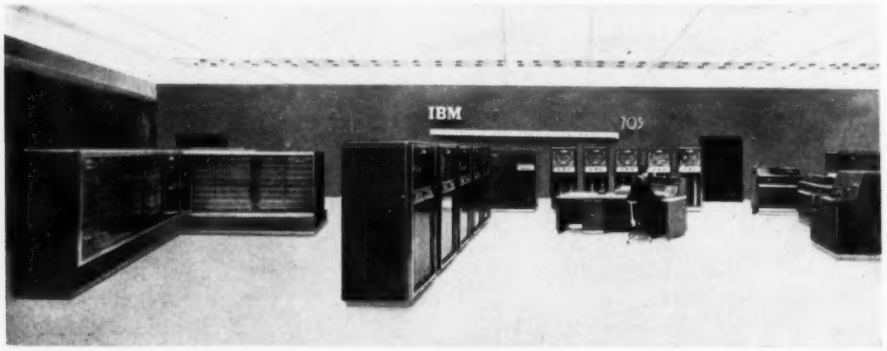
One future use of the system will be processing of personnel assignments in the Zone of Interior and overseas. Electronic data processing and transmission will reduce by an estimated 30 days the time now needed for handling personnel transfers. Cards will be sent through processing centers and the men will report directly to their new assignments.

It is estimated that over a million military personnel will be administered by this system. Later an additional half million civilian personnel may be similarly handled.

Studies are under way to determine how CONUS-DTSN can be utilized to ease the transition from peace to war in an emergency.

General of California Orders Data Processing Machine

BEHIND A MAZE of flashing lights is a gigantic computer with a "memory," better known as the type 705 Electronic Data Processing Machine, manufactured by the International Business Machines Corp. which has been ordered by General Telephone Co. of California and represents the first large-scale computer in the country to be used by an operating telephone company for automatically assigning telephone numbers and preparing service orders, according to Edwin M. Blakeslee, company president.



Gigantic is the word for the type 705 electronic data processing machine (above) manufactured by the International Business Machine Corp. which has been ordered by General Telephone Co. of California for their Santa Monica general office. This machine with a "memory" is the first large scale computer in the country to be used by an operating telephone company for automatically assigning telephone numbers and preparing service orders.

The heart of the IBM 705 is its "magnetic core memory," which is made up of a network of tiny cores shaped like doughnuts. The decision-making ability of the machine comes from a set of instructions (or program) stored in the core memory, and on the basis of these instructions the core memory can make 1,764,000 decisions per minute (a simple decision such as whether a line is one-party or two-party, etc.). It is capable of storing 40,000 alphabetical or numerical characters and each character can be obtained from the magnetic core memory by the machine in an almost inconceivable 17 millionths of a second.

The information that is to be processed by the core memory is carried on magnetic tapes, similar in appearance to those used on tape recording machines. Each magnetic tape is 2,400 feet long and can contain 3 million to 5 million characters.

Information from one tape is fed into the machine where it is processed according to the instructions stored there, and the new information is "written" on a second tape.

As an example, one tape may contain all the necessary information (address, facilities, equipment, etc.) for 1,000 service orders; if it is desired to sort them into service order number—the machine is programmed for the job, the information from the tape is fed to the machine and the service orders are sorted by number. The result is a new tape containing the desired arrangement.

Specifically, since General Telephone Co. of California is the largest Independent telephone company in the country, it is looking to the IBM 705 to handle the immense paperwork and computations involved in the smooth function of a company of this size.

The basic application the machine will handle is the processing of service orders, including the assignment of new telephone numbers; the removal or cancellation of telephones and changes in the subscribers' type of service, such as four-party line to two-party, two-party line to one-party, etc.

Since only a portion of the machine's time will be devoted to service orders, several other applications are under consideration. One of these is revenue accounting which consists of producing and keeping records of all billing operations as well as the payment by the customer of the produced bills.

Another planned application is control of the warehouse inventory. The machine will order additional material when the stock gets lower than a predetermined quantity and direct movement of stock from warehouse to warehouse. It will also direct shipment of new equipment to the point at which it will be needed.

The machine will also be used to assist in planning for future expansion of the company, which is expected to double in size in about six years. The machine will assist in estimating forecast equipment requirements, give specification for necessary cable facilities and specify new central office equipment when required.

Prior to the delivery of this machine, a group from the company's general accounting department will be absorbed with the task of setting up the system of programming and preparing for the conversion from manual to electronic operation. In addition, personnel will have to be trained for the new job that will be created by the introduction of the IBM 705.

This pioneering step by General Telephone Co. of California is another manifestation of the company's desire to provide more economical and better service for its customers in 126 communities throughout the state.

End Seven-Month Strike Against Ohio Consolidated

The Communications Workers of America strike against the Ohio Consolidated Telephone Co., Portsmouth, O., which began on July 15 last year, came to a formal close on Feb. 27 (TELEPHONY, Mar. 2, p. 35).

Union members on Feb. 25 and 26 voted on a new contract and ratified it by a close vote.

On Feb. 27, company and union heads met in Columbus and signed the new 16-month contract.

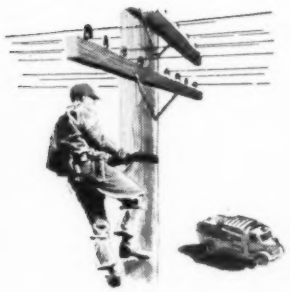
The world of science behind
EXIDE-MANCHEX BATTERIES

Being interviewed is L. E. Wells, Director of Engineering

"The reserve lead stretches battery life"

At the Exide Laboratories—**Reporter:** You're pointing to the lead buttons in an Exide-Manchex positive plate, aren't you?

Wells: That's right. And only a very small portion of the lead is activated when the battery is made. The rest is left in reserve.



Reporter: Why do you provide this reserve lead?

Wells: To keep the battery young. As long as this reserve is there, an Exide-Manchex Battery works just as well as when it comes from the factory.

Reporter: Is that why the battery lasts so long?

Wells: Yes, and there are Exide-Manchex Batteries in use today over 20 years old with years of life left.

Reporter: Don't other batteries have a reserve lead supply?

Wells: Yes, but the reserve lead must support a plate. When it gets too thin, sometimes the plate disintegrates. The Exide-Manchex buttons are supported by a special grid that doesn't disintegrate. The reserve lead can be completely used without weakening the plate structure.

Reporter: Obviously this is an important feature in the Exide-Manchex Battery.

Wells: Yes it is, but just one of many engineering details that contribute to their long life.

Note to battery users: When you order batteries for float or cycle service in stationary applications, be sure to specify Exide-Manchex. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY Exide®

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Automatic's Dials spell

SAVINGS . . . . a

A great many economy-minded telephone men are sold on the Automatic Electric Dial. They know it pays for itself with the very first trouble-trip it saves (and it saves a *lot* of them). Here are the happy facts behind this wide preference for these dials with "A. E. Co." on the base:

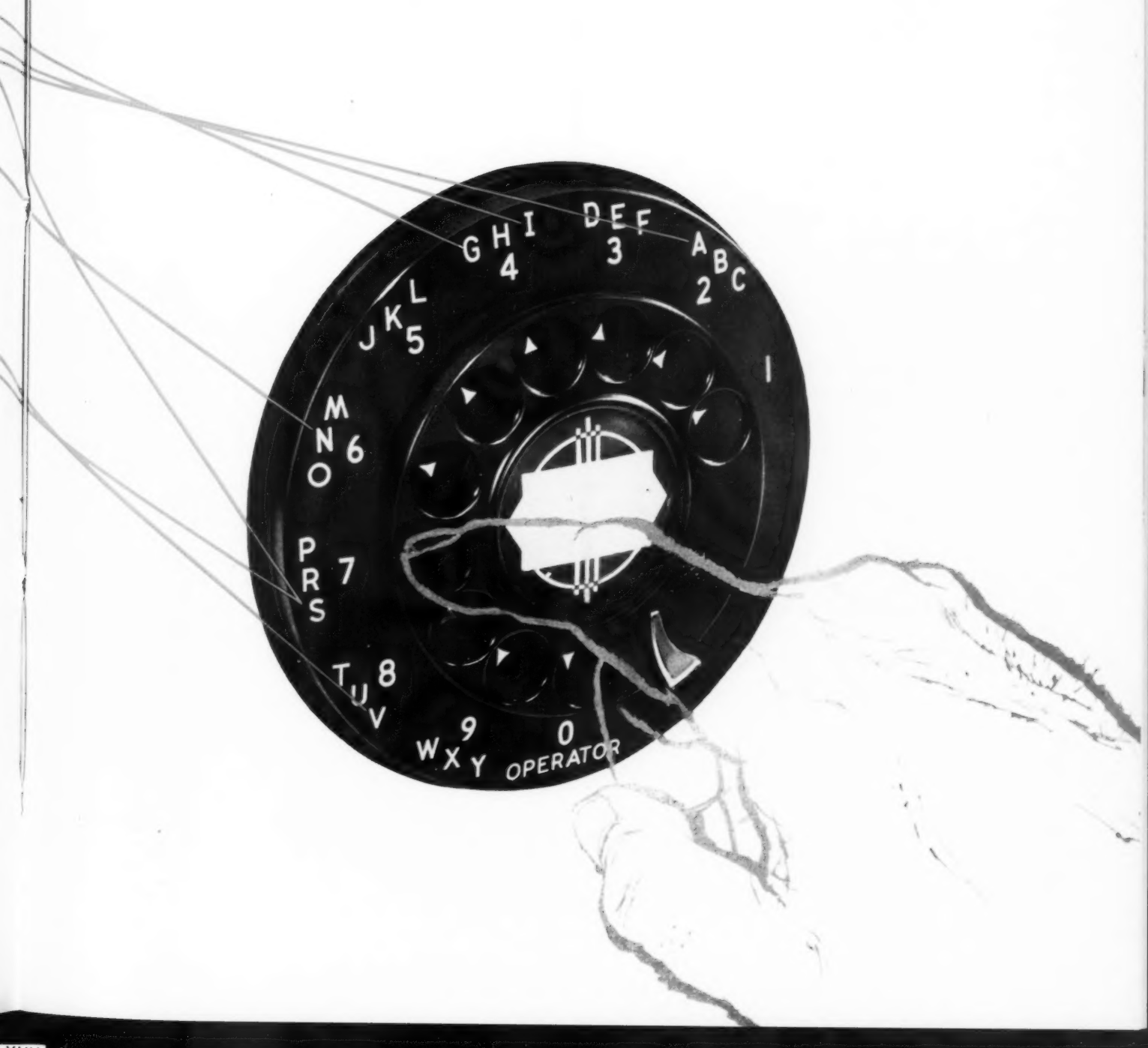
- Mirror-finish working parts, precision-cut gears, special lubricants, keep down wear.
- Twin contacts for greater dependability.
- Plastic dust cover provided when used in Types 80 and 90 Telephones.
- Improved governor design for longer life.
- Arrowheads guide subscriber's eye from numbers to finger holes.

Specify AK-90 for metropolitan dials, AK-80 for 1-0 dials—they fit all makes of telephones. Better yet, order Types 80 and 90 Telephones, and get *all* their unequalled advantages, including Automatic's famous Dials! Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

...at every turn



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Tips on Correct Telephone Usage to Pass on to Your Customers

EVERY TIME YOU answer or handle a telephone call, you can win or lose a friend for yourself or business for your company.

That reminder, provided by the Bell Telephone Co. of Canada, holds true for all people who use the telephone.

The importance of remembering it is growing daily, because people in North America are already the world's leading telephone conversationalists and telephone use is steadily increasing.

When you do business by telephone the person on the other end of the line judges everything about you by what you say and how you say it. That's why it has been said that "When we speak, we speak twice." Our words can say one thing, and our voices another. Often a speaker's tone imparts more than his words.

If you could call yourself on the telephone what would you hear? Simply your voice and speech—your sole representatives. You would hear yourself as others hear you.

What would be the answers to some of the questions you might ask yourself . . . "Is my voice pleasing?" . . . "Is there a warmth about my greeting when I answer the telephone?" . . . "Does my voice convey the impression of a helpful, alert person?"

If you suspect that the answers to those questions might not be as favorable as you would want them to be, here are a few of the things to remember which should help you get the most out of telephone conversations.

You can improve the clarity of your speech merely by speaking directly into the mouthpiece. The reason for this is that the telephone transmitter is designed to eliminate all room noises and pick up only sound uttered directly in front of it. When the lips are less than a quarter of an inch from the mouthpiece you get the best results.

Speak to the person, not at the telephone. Use the caller's name whenever you can, and picture him clearly in your mind. Try to gain the illusion that you are talking face-to-face.

In all conversations, try to get the caller's viewpoint. Don't interrupt, argue, or become impatient. Avoid making him repeat because of inattention on your part.

When the telephone bell rings and you are ready to answer, always remember that your first words are important. You don't know who is calling, but it may be one of your company's best customers, or a prospective customer making inquiries or maybe even the boss with that long-awaited raise.

[**EDITOR'S NOTE:** *It is the constant duty of telephone companies to inform both business and residence subscribers on the proper use of the telephone. This article, based on information released by the Bell Telephone Co. of Canada, should be of value to companies desiring to offer advice and suggestions to subscribers.*]

Avoid such indefinite and time-wasting expressions as "Hello" and "Yes." It is much better to identify yourself by announcing your name or the name of your department, depending on which you think will be most helpful to the caller.

For example, you might say "Brown here" or "Brown speaking"—"Accounting department, Brown speaking." Your own identification made, the person calling will probably respond by identifying himself.

If you are answering another person's telephone, give that person's name. Examples might be: "Mr. Smith's office" . . "Policyholders' service department, Mr. Smith's telephone" . . . "Mr. Smith's office, Miss Jones speaking."

When you answer another person's telephone, try to find out who is calling, if he does not identify himself. The best way to do this without appearing inquisitive, and to make it clear that the information is for the other person, is to ask a question like one of:

"May I tell him who is calling, please?"

"May I take a message for him, please?"

"Would you like to have him call you?"

In an organization where there are many departments, it is well to keep in mind that being transferred from one telephone to another may be annoying to a caller. No one likes to be obliged to repeat what he has to say to several people. Therefore, if you can attend to a call satisfactorily yourself, do so.

If, however, you can't take care of the call, you may offer to refer the matter to the proper person, naming him if possible. In some cases, you will want to indicate that the person calling will be called back. In other cases this won't be necessary. For example: "This is something Mr. Brown of the accounting department looks after. I'll tell him about it, and I'm sure he will give it prompt attention."

If you know where the matter should be referred, and that someone will be there to handle it, it may be advisable to transfer the call. An example of this: "That matter would be handled by our accounting department. If you wish, I'll have you connected with them."

When you are to be away from your telephone, it's a good plan to leave word where you are going, how you can be reached, giving the extension number, if available, and when you will return.

Whenever possible, have a pencil and memo or order pad at hand when you answer a call; then you will not have to leave the telephone and keep the other person waiting.

Here are some further tips on telephone etiquette. When it is really necessary to interrupt, first ask permission of the other person and explain what you are doing, or going to do. For instance: "Will you hold the line, please, while I find out about that?"

On returning to the telephone, if there has been some delay, thank the other person for waiting. It's as simple as this: "Thank you for waiting, Mr. Smith," or "I am sorry to have kept you waiting, Mr. Smith."

If you require a little more time to garner your information, offer to call the other person back later. You might say "I'm sorry, but it will take a little time to get that information. If you wish, I'll call you back as soon as I have it."

Up to now, you have been the person receiving a telephone call. To get the other viewpoint, let's reverse the situation—you are the one calling and presenting yourself to the other person. The underlying ideas are the same. You want to make a good impression and receive a welcoming answer.

Self-introduction is an important matter, from your point of view anyway. As you are the caller, you are in the position of wanting something, either service or a hearing for whatever you may desire to promote or sell. In either case, your cause will be aided by genuine, well-expressed courtesy.

If the person you are calling answers

(Please turn to page 45)

ANSONIA® NEW Ankoseal® PARALLEL LINE WIRE

Two parallel Copperweld conductors insulated with the toughest black polyethylene compound for continued service under the worst conditions.

Answering The Call For Quality!

Ansonia's enviable reputation for quality is emphasized once again in this new product. You simply will not find parallel line wire that gives better transmission qualities and takes a beating in the open the way Ankoseal Parallel Line Wire does!

Install your span lengths to absolute maximum with a feeling of complete security even to heavy loading zones. Transposing ANKOSEAL Line Wire is simplicity itself . . . simply twist the desired number of turns between poles. Highest quality transmission characteristics can be obtained and cross talk eliminated in rural areas.

Ansonia Ankoseal Two Conductor Parallel Line Wire is available in #12 or #14 AWG in 5,000 or 15,000 foot reels.

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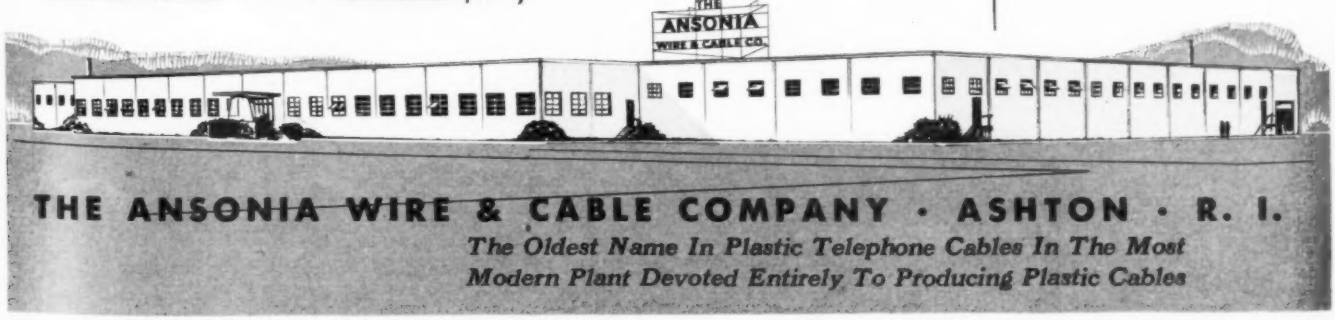

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The Oldest Name In Plastic Telephone Cables In The Most Modern Plant Devoted Entirely To Producing Plastic Cables

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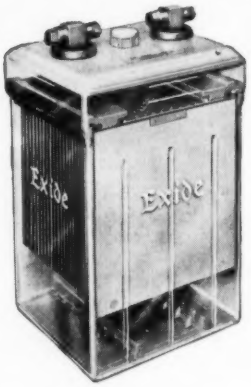
The Cook PLX Cable Terminal is designed for use on plastic cable that is looped through the terminal without cutting the wires and the desired pairs terminated for distribution. Protection is optional. When ordering, specify cable diameter for correct size grommets. COOK ELECTRIC COMPANY.



Big Capacity in Small Size. Unique positive plate in Exide-Tytex Battery has large area of active material that results in high capacity. Exclusive patented Silvium grid resists corrosion — prolongs battery life. Taperless plastic jars save one-third space. Exide Industrial Division, THE ELECTRIC STORAGE BATTERY COMPANY.

Here's Kellogg's Collection

S-5 Sub-Cycle for Synchromonic ringing. Generates 30, 42, 54, and 66 cycles, plus a fifth frequency. Ringing frequencies are locked to the A-C line frequency. Provides maintenance-free operation. Made by LORAIN PRODUCTS CORPORATION.

Preformed Splices for damaged line wires and messenger or for new construction. Restores full rated strength and full conductivity. Cable spinner can easily cross the splice. Quickly installed by hand. Simply wrap the splice around the conductor. Available for galv. steel, copperweld, and copper line wire and messenger. PREFORMED LINE PRODUCTS COMPANY.

You'll like Kellogg's winning service, too! An experienced telephone man handles your order, and you get speedy delivery from your local Kellogg warehouse or distribution point.

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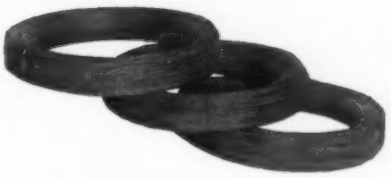
Long Service Life and Low Plant Costs go hand in hand with the installation of ENDURPRENE — The Neoprene Drop Wire available in both Copperweld and Bronze. This flexible and easy-to-handle wire is made by GENERAL INSULATED WIRE WORKS, INC.



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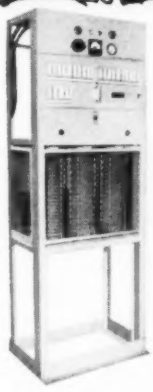
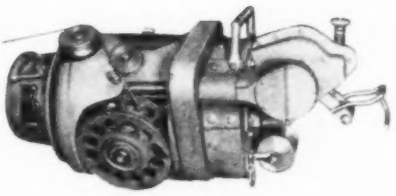


Air Compressor Dehydrator for supplying dry air to aerial and underground cables. Supplies up to 40 cables. Individual air flow indicators for each cable. Both automatic and manual units are available. S & G MFG. CORPORATION.



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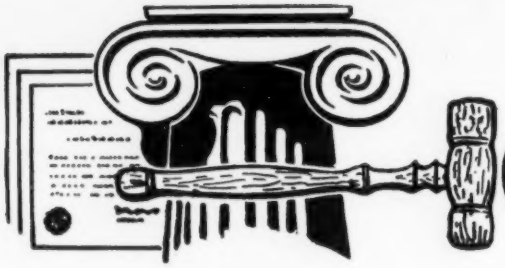


Courts and Commissions

Superior Judge Rules Error In N. C. Co-op Decision

Superior Court Judge L. Richardson Preyer has signed a judgment upholding the jurisdiction of the North Carolina Utilities Commission in a case in which it ordered Central Telephone Co. to serve petitioners in the territory of the Randolph Telephone Membership Corp., but ruling that it did not properly exercise its authority and committed a "reversible" error in its order (TELEPHONY, Jan. 26, p. 34).

In a case watched with interest by telephone companies and co-ops and public utilities throughout the state, he ruled, as the result of a hearing conducted at Greensboro recently, that the commission in its order "disregarded or misconceived" the law in several ways.

The court ruled it erred by failing to give weight to the fact that the co-op "had taken steps to begin construction and was planning and preparing to serve the territory in question"; by not giving "proper recognition" to a prior opinion by N. C. Rural Electrification Authority that the co-op's organization was feasible to serve the area in question; by failing to "give reasonable protection to the territory the co-op was to serve"; and by holding that the co-op would charge "high and excessive rates" if it furnished service to the petitioners, that the service by the co-op "would be inefficient and an economic waste and loss" and that Central Telephone "is able to serve petitioners almost at once."

The commission's finding that "the public convenience and necessity required and demanded" that Central serve the petitioners also is not supported by "competent, material and substantial evidence," the court held.

The judgment, which reverses the order and does not remand it to the commission for further findings of fact, was submitted after an announcement by Judge Preyer several weeks ago that his order would reverse the commission. The judge gave no details of his proposed judgment in his announcement, and in conferences since that time the commission has contended that the case should be remanded for further hearings because the commission is a fact-finding body. It has indicated that it would appeal the case to the state supreme court if the case were not remanded.

The commission's original order has been opposed vigorously by telephone co-ops throughout the state who stated that it threatened their existence and plans for organization of further telephone memberships.

N. Y. Commission Upholds Directory Binder Ban

Commissioner Spencer B. Eddy of the New York Public Service Commission on Feb. 18 issued a memorandum upholding the legality of tariffs of two Independent companies prohibiting the use of binders on telephone directories, except as furnished by the telephone company.

The case before the commission involves the tariffs of the Cazenovia Telephone Corp. and the Seneca-Gorham Telephone Corp.

The provision of the Cazenovia company under investigation reads as follows:

"Telephone directories containing the listings of subscribers within a specified area issued from time to time by the telephone company free of cost are and remain the property of the telephone company. They shall not be mutilated and shall be surrendered to the carrier who delivers the subsequent issue.

"No binder, holder or auxiliary cover except such as may be furnished by the telephone company shall be used in connection with any telephone directory furnished by the telephone company."

The Seneca-Gorham provision reads as follows:

"The telephone company's equipment, apparatus, channels, lines, directories, listings, and any other facilities furnished to subscribers and/or the public shall be carefully used and shall not be damaged or abused and, unless otherwise provided for in the tariff, no equipment, apparatus, circuit or device not furnished by the telephone company shall be attached to or connected with any facilities furnished by the telephone company, either physically by induction, acoustically or otherwise.

"In any case that such unauthorized attachment is made, the telephone company may remove or disconnect same, and if violation persists the telephone company may suspend or terminate them.

"No binder, holder or auxiliary cover, except as may be furnished by the telephone company, shall be used on or in connection with any telephone directory furnished by the company.

"Equipment furnished by the telephone company shall remain its property and be returned to it whenever requested in as good condition as reasonable wear permitted. The cost of repairs or repair made necessary by a violation of any of the foregoing regulations shall be charged to the subscriber."

Commissioner Eddy issued his memorandum as part of the investigation being made by the commission in connection with the tariffs of the two above-mentioned companies. Commissioner Eddy stated:

"The filings in question arise by reason of the activities of the National Merchandising Corp., a Massachusetts corporation.

"Among its other activities it solicits what it terms cooperative advertising; that is, it solicits advertising from a limited number of persons in any community and, for a rate of compensation fixed by it, places that advertising on some article which it distributes at its own expense to selected persons in the business community where the advertising was obtained.

"The names of the group to whom distribution is made may be obtained from various sources such as a municipal directory, the telephone directory or otherwise. The article distributed free of charge containing the advertising must, of course, be designed to appeal to the group to which it is given.

"One of the articles for which it solicits advertising and which it distributes without charge to the recipients is a cover for telephone directories.

"The tariff provisions under review are designed to prohibit this type of activity by the company or others engaged in similar enterprise. These tariff provisions are under our jurisdiction and are our sole concern in this case.

"There are two main objections of the telephone companies to the distribution of the directory covers. The claims are:

"(1) That it either does or can interfere with the rendering of efficient telephone service; and

"(2) That it is an invasion of the companies' property rights which will adversely affect the companies' revenues, and hence, require higher rates for telephone service."

Commissioner Eddy also said that, based upon all the evidence presented, the commission concluded:

"(1) That the use of any attachment to or insert in a telephone directory which tends to obscure any portion of the directory has a tendency to interfere with telephone service.

"It may be argued that if the attachment itself shows the instructions or information, that no harm has been done. However, if such be the case, it is the danger that such information is not kept current.

"This is so, irrespective of the desire of the furnisher of the attachment to keep such information current. He cannot, of course, control what will be done with the attachment or insert once it is placed in the hands of the telephone subscriber.

"(2) The use of any attachment or insert containing solicited advertising in competition with advertising listed by the company itself for its directory is an invasion of the company's property rights and unfair competition and which may, and in the evidence before us has, reduced revenues thereby casting an additional burden upon the subscriber.

"This is particularly true where the directory itself, which is copyrighted, is used as a basis of distribution and where the solicitation for advertising is based upon representations, express or implied, that the advertising will appear in connection with the company's directory.

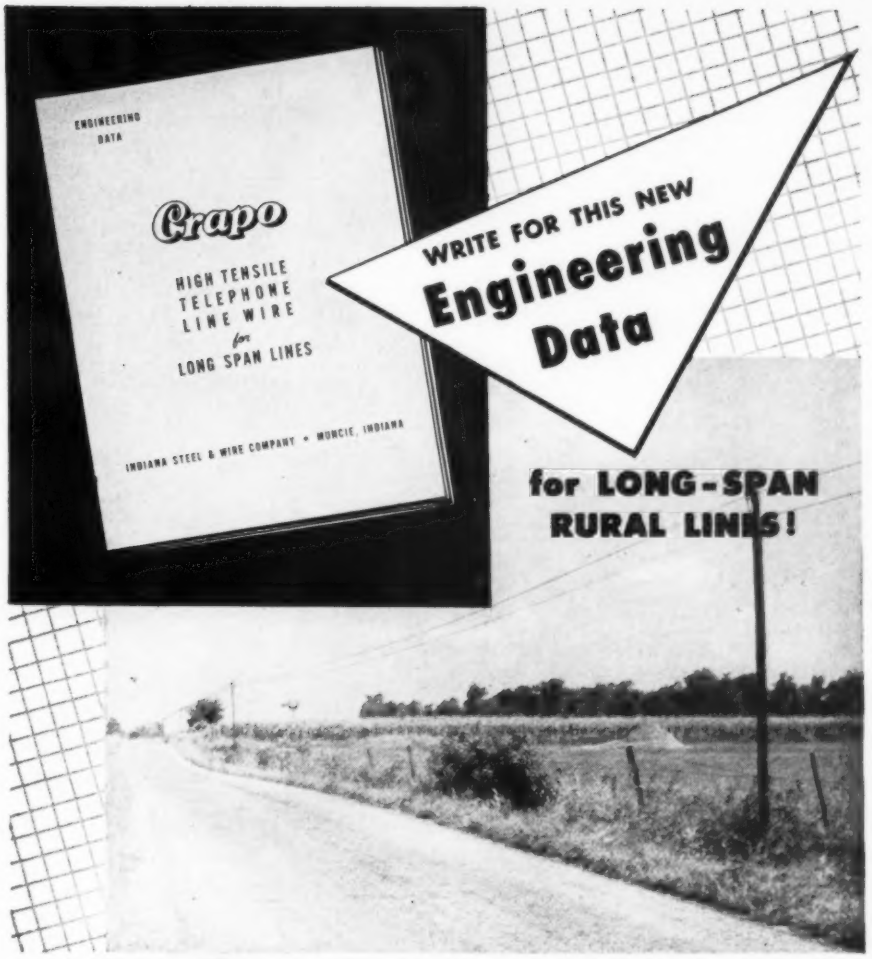
"This finding has been generally sustained in other jurisdictions in a number of cases. See Illinois Bell Telephone Co. v. Miner (Illinois) 136 NE (2d) 1; Southern California Telephone Co. v. Ver Halen Publishing Corp. (California) Superior Court of Los Angeles, January 23, 1942.

"Michigan Bell Telephone Co. v. Wharram (Michigan) 82 PUR (NS) 94; National Telephone Directory v. Dawson (Missouri) 263 S.W. 483; Bell Telephone Co. of Pennsylvania v. Rogers (Pennsylvania) Common Pleas, Allegheny County, May 2, 1936.

"New Jersey Bell Telephone Co. v. O'Donahoe (New Jersey) District Court, June 4, 1934; Lee Telephone Co. v. Walker (Virginia) Corporation Court of Danville, Feb. 27, 1954; Press Publishing Co. v. Levi Bros. & Co., (New York Supreme Court, Special Term, 1912) 3 T.M.R. 59."

Commissioner Eddy concluded that the intent of the tariff provisions under investigation is lawful; and that similar tariff provisions which are designed to prevent interference with service or interference with the company's property rights are lawful. Inasmuch as the problem is not confined to the territory of the two companies involved and that there are other tariff filings intended to accomplish the same result, and that the problem is statewide and not confined to the small territories under consideration in this case, the commission decided a standard tariff provision on this subject is desirable.

Pending study by the commission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Crapo High-Tensile Line Wire also makes for lower maintenance costs. Its superior tensile strength offers increased resistance to ice and wind loads . . . provides a greater margin of safety. Heavy galvanized coatings assure dependable, lasting protection.

For maximum savings in the construction and maintenance of rural telephone lines, specify the *Crapo* Telephone Wire which best fits your requirements.

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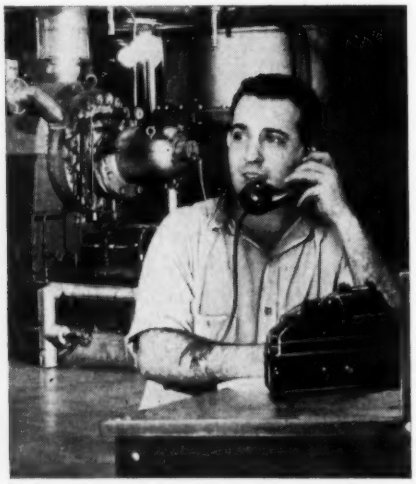


Noise can be money!

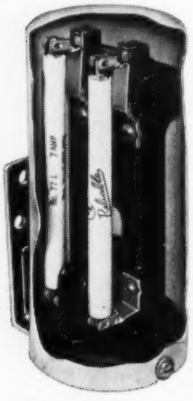
Take a business subscriber who has a telephone in some extremely noisy location—and who has finally decided to do something about it. Would you rather have him spend money in building a soundproofed booth—or give **you** the money as monthly income on a telephone which completely licks the noise problem?

The GAI-PHONE is such an instrument. It has a special transmitter that actually creates a "Zone of Quiet" around the handset—even in a spot as noisy as a boiler factory! It costs the subscriber **less** than a booth—and you get the revenue!

Ask us for complete details.

New Design Station Protector

For a station protector with really new features, specify the Reliable Series 2000 Protector.



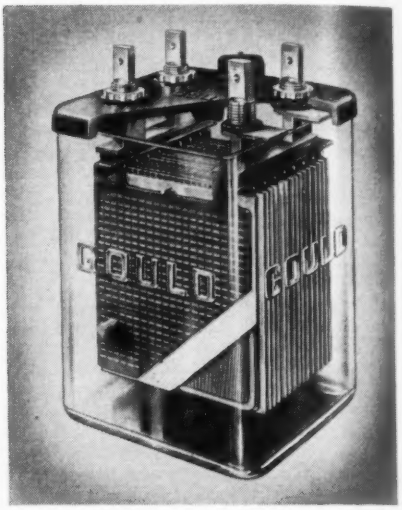
All metal parts are bronze, aluminum or stainless steel.

This new protector replaces the Series 1000—and only the time-proved Reliable Discharge Blocks and Fuses remain unchanged. Quality and performance are better than ever.

The new protector comes with a phenolic fuse mount (rather than porcelain); a flexible neoprene base with integral wire entrance sealing slots (instead of open wire holes); and a redesigned fuse mount and terminal post that permit putting wiring snugly in place without removing fuses. The fuse mount can be easily reversed to wire from right or left.

Insure your power supply

Because Planté batteries practically last forever... providing standby power that never fails... they're the best operating insurance you

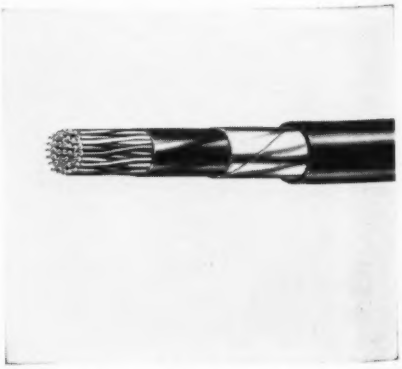


A sure, dependable supply of power when you need it. That, briefly, is the story of this Gould Planté battery.

can buy. In switchgear, signal and alarm systems, or emergency light and power applications, these lead batteries have rolled up amazing performance records . . . are famous for their ability to deliver a powerful surge or a steady flow of current the instant it's needed. Make sure you're in operation . . . always. Choose Gould Planté.

Economical 775-P-SS Self-Supporting Telephone Cable

Low Cost SS Cable With Dependable, Long Life



Available in 6, 11, 16 and 26 pair

This Ansonia Wire & Cable Company product offers finer electrical characteristics than any other comparable cable.

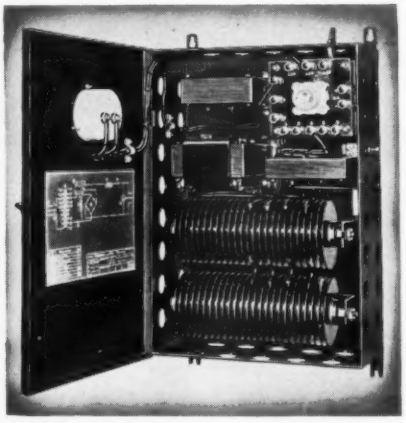
In outside plant construction you can eliminate messenger and associated hardware by using light, flexible Ankoseal Type 775-P Self-Supporting Cable.

Its 19 gauge medium-hard copper conductors are individually insulated and paired with systematically varying lays to eliminate crosstalk. Aluminum tape sheathing and plasticized jacket provide excellent protection against weather.

Here's a charger that adjusts itself to match battery drain

Daily load demands can vary all over the lot. That's why you need a battery charger that adjusts its output automatically to maintain your batteries in peak condition.

Such a unit is the Electrox Automatic Battery Charger. That word "automatic" is a most important



A self-regulating battery charger that keeps your storage batteries in top condition and prolongs their life.

part of its name. The Electrox Charger will maintain a charging rate in proportion to the drain on the batteries within its rating.

The Type RB illustrated is completely automatic, with no relays, vibrators or tubes requiring attention or adjustment. Entirely noiseless, it continues to charge even while the telephone system is operating—with no hum or interference. Write for complete specifications.

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staff to further investigate the possibilities of such a standard provision, the case will be continued. In the meantime the tariff provisions under investigation were permitted to continue in effect.

Holds It Isn't Duty of Company to "Police" Calls

The Alabama Supreme Court on Feb. 28 ruled that it is not up to the telephone company to stop anyone from making telephone calls for the purpose of harassing or interfering with other telephone subscribers.

This in essence was ruled by the state supreme court when it turned down an appeal from a wife who tried to force Southern Bell Telephone & Telegraph Co. either to cut off a rival's telephone or else monitor her calls.

Mrs. Marie Mickwee asked for a court order in Birmingham on the complaint that the other woman, Miss Ulma Lee Boteler, made "incessant" telephone calls to Mrs. Mickwee's husband over a period of several years.

She said the calls were made for the purpose of "harassing" her and "alienating the affections" of her husband.

To stop it, the wife sought a court order to require the telephone company either to suspend Miss Boteler's telephone service or to monitor the telephone and "keep complete records as to date, number and duration of time" on calls made by Miss Boteler.

The circuit court in Jefferson County upheld demurrers by the telephone company and said in effect that Mrs. Mickwee had no legal complaint.

Central, General Exchange Ga., Minn. Properties

Actions were taken by the Minnesota Railroad & Warehouse Commission (on Feb. 20) and the Georgia Public Service Commission (on Feb. 27) to effect transfer of Minnesota and Georgia telephone properties by subsidiaries of Central Electric & Gas Co. and General Telephone Corp.

The operating companies involved are the Fairmont (Minn.) Telephone Co., Minnesota Community Telephone Co., Waterville, Minn., and the Georgia Continental Telephone Co., Monroe, Ga., all owned by General Telephone Corp.; and the Southeastern Telephone Co., Tallahassee, Fla., an affiliate of Central Telephone Co., both of which are subsidiaries of Central Electric & Gas Co.

On Feb. 20 the Minnesota commission authorized the Fairmont and Minnesota Community companies to sell all of their properties to Georgia Continental Telephone Co. Georgia Continental, in turn, was authorized to sell these Minnesota properties to Southeastern Telephone Co.

On Feb. 27, the Georgia commission approved the sale of the Georgia properties of Southeastern Telephone Co. to Georgia Continental Telephone Co.

As a result of these actions, Georgia Continental will own and operate all of the properties formerly under the Southeastern Telephone Co.; and the Fairmont and Minnesota Community companies will be operated as the Southeastern Telephone Co.

Southern New England Files For Increase in Rates

Under a proposed new schedule of rates for Southern New England Telephone Co. filed on Mar. 5 with the Connecticut Public Utilities Commission, the company would realize about $9,504,000 in additional annual revenue.

In the New Haven and Branford exchanges, the principal proposed changes are as follows:

One-party residence service, now $5.25, would go up 65 cents; two-party, now $4.05 up 40 cents; and four-party, now $3.45, up 35 cents.

Relocation Bill Passed in Utah, Vetoed in Wyoming

Governor Clyde on Mar. 4 signed into Utah law a bill to permit the state to share the cost of relocation of utility facilities when necessitated by highway construction projects.

•

Governor Simpson of Wyoming on Mar. 2 vetoed similar legislation.

N. D. Commission Approves Increase for Independent

The Dickey Rural Telephone Mutual Aid Corp., Ellendale was authorized by the North Dakota Public Service Commission to increase its rates effective Mar. 1, it was reported recently.

The company serves approximately 1,825 subscribers in southeastern North Dakota.

At a public hearing on Nov. 21, the commission was told the company has been operating at a loss which in 1955 amounted to $45,920 and in the five-month period ending May 31, 1956 was $15,101.

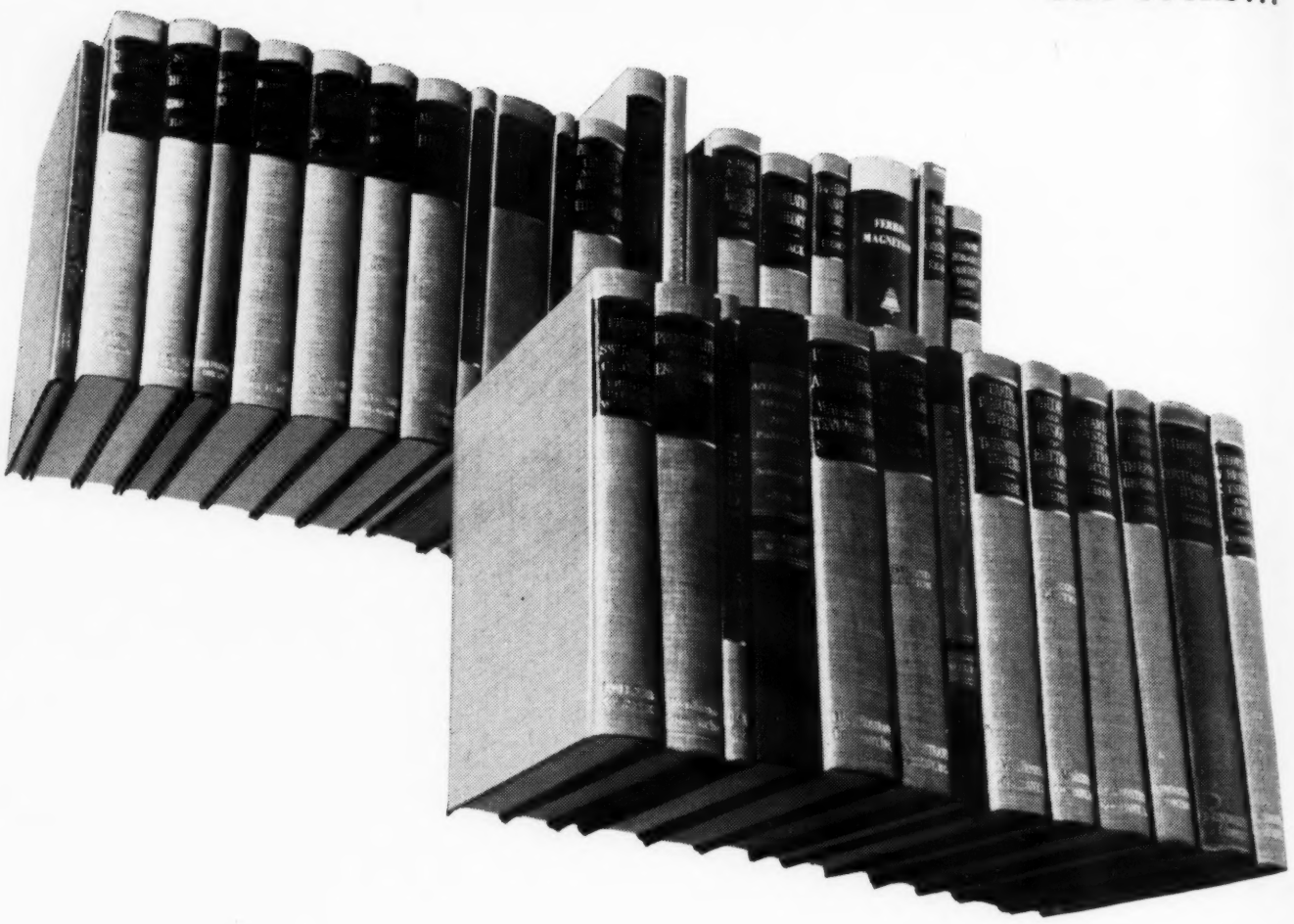
Bell of Pa. Takes Over Independent Company

A dissolution order for the St. Lawrence Rural Telephone Co., Ebensburg, Pa., incorporated since 1912, was signed by Cambria County Judge Ivan J. McKenrick on Feb. 27, it was reported.

Bell Telephone Co. of Pennsylvania has taken over the St. Lawrence company.

XUM

The books...



How the scientific world shares in fruits of the telephone art

In their work to improve telephony the scientists and engineers of Bell Telephone Laboratories make important findings in many sciences. They thoroughly report these findings in professional journals and magazines. But sometimes, as knowledge accumulates in a vital field, a "treatment in depth" is prepared in book form.

Bell Laboratories authors have written 36 books to date and others are in preparation. Many have become classics in the Laboratories' primary field of communications. Many have become standard works of wide application because they provide a fundamental guide for technologies in other fields. For example, the design of automatic switching systems is of primary importance in computers; statistical quality control provides the indispensable basis for economical manufacture. Through their books these scientists and engineers and the Laboratories attempt to repay benefits they receive from the published works of others.

The pictures on the opposite page show some Bell Laboratories authors of technical books. A complete listing of titles may be obtained by sending in this coupon.

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Harold S. Black, B.S. in E.E., Worcester Polytechnic Inst., author of "Modulation Theory."

John R. Pierce, Ph.D., California Inst. of Tech., author of "Traveling-Wave Tubes."

Richard M. Bozorth, Ph.D., California Inst. of Tech., author of "Ferromagnetism."

W. Thornton Read, M.S., Brown University, author of "Dislocations in Crystals."

Hendrik W. Bode, Ph.D., Columbia University, author of "Network Analysis and Feedback Amplifier Design."

Walter A. Shewhart, Ph.D., University of California, author of "Economic Control of Quality of Manufactured Product."

C RURAL LINE FOR AERIAL PLANT

Concluded from page 22

an ordinary wire terminal are done in a conventional manner.

From the station protection standpoint, C Rural Wire is classed as open wire and it, therefore, requires a fuse-type station protector. The need for lightning protection at junctions of C Rural Wire and cable depends on the degree of exposure. If the wire run is one-half mile or more, protectors will be required at the junction of the wire and cable.

As previously stated, C Rural Wire may be used in long spans of up to 600 feet. When the wire is to be placed on existing pole lines of such long spans, its extra high strength is an advantage. It should be recognized, however, that for new construction the longest span is not necessarily the most desirable or economical.

Such factors as pole height, ground clearance, stringing tensions, fatigue endurance, strain at maximum storm load, sag at maximum load and recovery after storm condition can all be calculated. They must then be additionally evaluated with respect to each other to effect an economic compromise.

In spans up to 250 feet in all loading areas and up to 350 feet in medium and light loading areas, the stringing tensions are kept under 200 pounds at 60°F. At 0°F when the vibration effect of winds is apt to be most severe the resulting stress is not over 35,000 psi and fatigue failure is therefore not expected to be a serious factor.

The storm load under these span conditions is calculated to be 65 per cent of the wire strength in the heavy loading area and down as low as 35 per cent in the light loading area. It is not expected that retensioning will be necessary to re-establish clearances even after severe storms.

For longer spans, increased stringing tensions are necessary in order to avoid excessive sag. Under the worst conditions stringing tensions up to 300 pounds are used. The resulting stress in the wire at 0°F is 56,000 psi (about 30 per cent of ultimate tensile strength) but it is considered acceptable from the fatigue endurance standpoint because of the damping effect which the insulation and the twists placed in the wire have on wind induced vibration.

The maximum storm loaded tensions calculated for long span conditions are as high as 80 per cent of the minimum breaking strength of the wire. Resagging and cutting out slack after maximum storm loading will probably be necessary in some cases in order to restore proper tensions and clearances. When retensioning, it is important that the twists in the wire be retained for noise reduction reasons.

TIPS ON TELEPHONE USAGE

Concluded from page 36

and identifies himself, promptly announce your name and, if desirable, the company's name:

"This is Jones, of Allied Distributors."

When you leave word for someone to call you, leave both your name and telephone number. Be sure the person with whom you leave the message gets it correctly.

When you have finished a telephone call and said "Goodbye" or "Thank you," replace the receiver carefully on the telephone cradle. Slamming down the receiver can be likened to slamming the door after an actual visit.

We are not born with a voice. We are born with the ability to expel air from the lungs and as we contract our vocal chords and as the air passes through them, a sound wave or tone is set up. The tone passes through the throat over the base of the tongue and out between the teeth and the lips. Movement of the tongue, the teeth, and the lips, molds or "mouths" that sound into broken sections which we call words.

Two of the most common faults of speech are: (1) Talking without sufficient air in the lungs, and (2) lack of mouth energy, which has been called lip laziness, or tongue laziness. Most people can make immediate improvements in their speech by merely using more energy.

Following are seven fundamentals of good speech:

(1) For distinct enunciation, every word, every syllable, every sound, must be given proper form and value.

(2) Think of the mouth chamber as a mold in which the correct form must be given to every sound.

(3) The teeth should never be kept closed in speech.

(4) You may know what you are saying, but others will not, unless you make it clear to them—so talk distinctly and not too fast.

(5) The courtesy of face-to-face conversation, where the smile plays such an important part, can be expressed over the telephone only through the tone of voice and a careful choice of words.

(6) As your voice is the direct expression of your innermost self, you should be careful through it to do yourself full justice.

(7) Good speech is within the reach of everyone through diligent practice.

XUM

Appoint R. H. Aue Director, BDSA Communications

The appointment of Richard H. Aue, of Columbus, O., an executive of the Ohio Bell Telephone Co., as director of the communications division of the Business & Defense Services Administration, U. S. Department of Commerce, was announced on Feb. 13 by BDSA Administrator H. B. McCoy.

In announcing this appointment, Mr. McCoy said that most of Mr. Aue's business career has been spent in the communications industry and he brings to the agency current expert knowledge of industry problems related to communications equipment.

Mr. Aue is on loan from his company and will serve for a period of some six months without compensation from the government, after which he will be available as a reservist qualified by BDSA training to act in a similar capacity in any future emergency.

He was born at Delphos, O., on Aug. 20, 1912, and moved with his parents at an early age to Wapakoneta, O. He attended Ohio State University, graduating in 1936 with the B.S. Degree in Mechanical Engineering. Within two weeks after graduation, he went to work for Ohio Bell as an installer of equipment.

Richard H. Aue, an executive of the Ohio Bell Telephone Co., taking oath of office as director of the communications division of BDSA.

Except for three years with the American Telephone & Telegraph Co., at its New York headquarters, all of his service in the telephone field has been in various assignments with Ohio Bell. He is currently general plant personnel supervisor in the company's southwestern area. The other assignments included posts as district construction superintendent at Toledo, O., and division plant supervisor at Columbus.

Mr. Aue succeeds Earle D. Pitt, general manager of the southern division of the Western Union Telegraph Co., who has returned to his company after serving as division director since last August.

N. C. Association's Booklet Tells Independents' Story

The North Carolina Independent Telephone Association is presently distributing a 12-page, two-color booklet telling the story of the Tar Heel State's development, and the progress of its Independent telephone industry. The booklet was produced for the North Carolina association by the Telephone Advertising Institute, Chicago.

The booklet was designed to provide subscribers, stockholders, and potential stockholders with a factual picture of the Independent telephone industry in North Carolina.

The cover illustration gives graphic display to the fact that Independent telephone companies serve more than 75 per cent of the state's area.

Some of the subjects covered by both copy and illustration within the booklet are: A brief history of North Carolina's telephone service, a progress report since World War II, expansion and its problems, operating costs, taxes, service facilities, personnel, and plans for the future.

The guiding hand of this public relations gesture was F. G. LaPrade, president of the association. He saw the need for such publication and, in cooperation with the Telephone Advertising Institute, supervised its production.

Copies of the booklet may be obtained by writing directly to Mr. LaPrade at Lee Telephone Co., Martinsville, Va.

Marks 45 Years of Service

William Lassleben, division equipment superintendent of the Whittier exchange of General Telephone Co. of California, on Feb. 7 completed 45 years in the telephone industry. On Jan. 21, he received a 40-year service pin from his company, his tenure including service with the Automatic Electric Co. and the (then) Consolidated Telephone Co. at Whittier. His start in telephony was with the old Ashland (Wis.) Telephone Co., where he spent five years.

WARN LOCK-O-MATIC HUBS

APPROVED 'Jeep' EQUIPMENT

Automatically "idle" the front drive in 2-wheel drive

Patented

SAVE GEARS, TIRES, GAS!

Warn Hubs make your 4-wheel drive more useful than ever, because they make it into a "free-wheeling" 2-wheel drive, as well as a 4-wheel drive! Use it either way—automatically—*as you shift!* With Warn Lock-O-matics it *always* free-wheels in 2 w.d., always engages in 4 w.d., forward or reverse, *as you shift.* You automatically reduce front end wear, engine load, tire wear in 2 w.d.—there is no drag, gear whine, shimmy. Ask your 4-wheel drive dealer for a free demonstration of Warn Lock-O-matic or Locking (manual) Hubs today, or write. Models for all 4-wheel drives to 1½ tons.

WARN SELECTIVE DRIVE HUBS

WARN MFG CO., Riverton Box 6064-TY3, Seattle 88, Wash.

Line Service. Wherever there's trouble—wherever line repair crews and their equipment are needed—the extra traction of the Universal 'Jeep's'† 4-Wheel-Drive gets them through—in good weather or bad. The 'Jeep' travels on or off the road to take tools, equipment and men wherever the line leads.

Ten billion miles of proof!*

One of the reasons 'Jeep' vehicles assure uninterrupted customer service

The completely new Forward Control 'Jeep' FC-150 Truck. It's the first time a 4-wheel drive truck has so effectively combined so much cargo capacity (74-inch pickup box), with such exceptional "go-anywhere" maneuverability (81-inch wheelbase).

Maintenance. The 4-Wheel-Drive Universal 'Jeep' tows heavily-loaded service trailers to maintenance jobs in the city or over rough country terrain. With its all-wheel traction and low gear range, it has a drawbar pull of more than a ton.

†*Model CJ-5 shown.*

**An understated estimate of the miles of transport service driven by 'Jeep' family vehicles. Some estimates place the mileage at more than fifty billion.*

Because 4-Wheel-Drive 'Jeep' vehicles are the only vehicles in their weight class time-tested and performance-proved in 10 billion miles* of on-the-job transport service... they're depended on more and more to help maintain 'round-the-clock telephone service.

These "go-anywhere" vehicles work for you every day of the year—assure uninterrupted customer service—in good weather or bad. They travel the highway at top legal speeds in conventional 2-wheel drive. But when storms or other emergencies threaten service, the extra traction of their 4-wheel drive takes them through mud, sand, soft earth, or up steep 65% grades. With power take-off or hydraulic lift, 'Jeep' vehicles supply mobile power to operate many types of equipment from sprayers for weed control, to trenchers, post-hole diggers or winches.

Let your Willys dealer show you how 4-Wheel-Drive 'Jeep' vehicles spread their costs over many jobs... provide additional savings through long life, low upkeep and high resale value. Ask for a demonstration or write for specifications.

The 'Jeep'® family of 4-Wheel-Drive vehicles

WILLYS... makers of time-tested utility vehicles

WILLYS MOTORS, INC., TOLEDO 1, OHIO

XUM

2 NEW PRODUCTS in the KLEIN LINE

These new high-quality tools have been added to the Klein line.

A Pump Plier that gives easy one-hand operation and a firm grip in any of four positions.

And the new Klein Adjustable Wrenches of drop-forged alloy steel, light in weight, chrome plated for lasting protection and service.

Write for Bulletin

Bulletin No. 1157 on these two Klein tools is now available. Send for your copy.

Mathias KLEIN & Sons
Established 1857 Chicago, Ill., U.S.A.
7200 McCORMICK ROAD • CHICAGO 45, ILLINOIS

General System Announces Changes in Personnel Staff

Several changes in the staff of the personnel department within General Telephone System have been announced by Donald C. Power, president.

Effective Mar. 1, Edgar H. Alms, who is currently division traffic superintendent at General Telephone Co. of Illinois, will join the personnel department at New York as training and recruitment supervisor. Mr. Alms will report directly to Marshall K. Taylor, personnel director.

M. R. Houston, who is currently industrial relations director at General Telephone Co. of Upstate New York, will also join the personnel department in New York about Apr. 15, as wage and salary administrator, reporting also to Mr. Taylor. Mr. Houston succeeds James L. Malone, who has been promoted to the position of personnel administrator at the New York office. Mr. Malone's promotion was effective Mar. 1.

Maurice Gross, safety supervisor at General Telephone Co. of California, will succeed Mr. Houston as industrial relations director at General Telephone Co. of Upstate New York.

Effective Mar. 16, Charles A. Crain will be transferred from the industrial relations department of General Telephone Co. of Illinois to the position of industrial relations director for the Midwest properties of General Telephone System, comprising General Telephone Cos. of Iowa, Nebraska and Missouri. Mr. Crain's headquarters will be at Grinnell, Ia., and he will report directly to Mr. J. L. Van Horn, president of those companies.

Mississippi Company Appeals Rate Case in Court

The Home Telephone Co., Olive Branch, Miss., has taken its fight for higher rates into Hinds County Chancery Court (TELEPHONY, Feb. 2), it was reported on Feb. 21.

The Independent company is appealing a decision of the Mississippi Public Service Commission.

Commission Chairman Rubel Phillips said the company requested a 33 per cent rate increase and was granted only a 16 per cent increase.

Approve Minnesota Sale

The Minnesota commission on Feb. 11 authorized the Anoka County Cooperative Telephone Association to sell its property to the Anoka County Telephone Co. The cooperative owns a telephone system in Soderville and Bethel, serving about 465 stations.

FAST, LOW-COST WAY TO INSTALL PIPE . . .

push it under streets, roads, tracks, lawns with a timesaving

GREENLEE HYDRAULIC PUSHER

Speed underground piping jobs this way. GREENLEE Pusher is one-man-operated (by hand or with power pump), portable, simple to set up and use. No tearing up of pavement, floors, lawns . . . does away with extensive ditching, tunneling, backfilling, repaving. GREENLEE Pusher cuts job time to a fraction . . . often pays for itself on first job.

Two feet per minute average pushing time

GREENLEE Pushers are available in two sizes: No. 790 for ¾" to 4" pipe . . . No. 795 for pipe over 4", concrete sewer pipe, large ducts. Average performance of No. 790, shown above with power pump, two feet per minute. Write for literature.

GREENLEE

GREENLEE TOOL CO.
2063 Columbia Avenue • Rockford, Illinois

Southwestern States Names Public Relations Director

R. L. Post of San Angelo, Tex., has been named public relations director for The Southwestern States Telephone Co. which has its headquarters in Brownwood, Tex.

Mr. Post assumed his new duties on Feb. 6, replacing C. N. Davis who is organizing a telephone directory company.

R. L. POST

A native of San Antonio, Tex., Mr. Post is a graduate of Southern Methodist University in Dallas where he received his Bachelor of Science degree in Journalism. He has been on the advertising staff of the *San Antonio Light*, news director of Radio Station KPAT in Pampa, Tex., and managing editor of the Alice (Tex.) *Daily Echo*.

C. N. DAVIS

Going to San Angelo about four years ago, Mr. Post became assistant manager of the San Angelo Chamber of Commerce. He has been with General Telephone Co. of the Southwest at

Long, lightweight lengths of Transite Conduit with new J-M Plastic Coupling ready for far west telephone installation.

...makes **Transite Ducts** cost far less to install

Transite Conduit with new J-M Plastic Coupling are installed in direct contact, saving trenching time and backfilling.

This unique plastic coupling, developed by Johns-Manville especially for telephone service, enables you to install Transite® Conduit at greatly reduced cost. It provides the following advantages:

1. **No separation between ducts**
2. **One backfill instead of several**
3. **Narrower, shallower trench**
4. **Faster installation**
5. **Watertight, silt-tight joints**
6. **No joint sealer**

Furthermore, the tight joints formed by this J-M Plastic Coupling enable you to use pneumatic rodding instead of expensive hand rodding—and eliminate cleaning.

Major telephone companies find that Transite Ducts provide better cable protection at lower cost. Made of asbestos-cement, they can't rust, are immune to electrolysis, resist corrosion and all normal soil stresses. The light 10-foot lengths are easy to install . . . reduce the number of joints in the line.

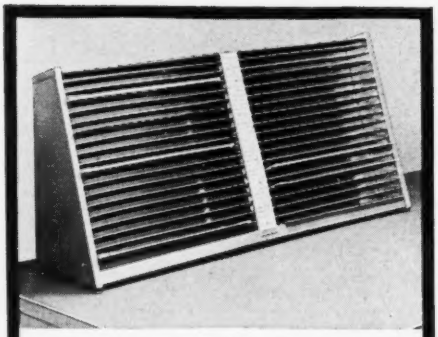
For more information, call your nearest J-M District Sales Office or write Johns-Manville, Box 14, New York 16, New York. In Canada, Port Credit, Ontario.

Johns-Manville

TRANSITE DUCTS

MADE OF ASBESTOS

XUM



Trouble Recorder Card Rack

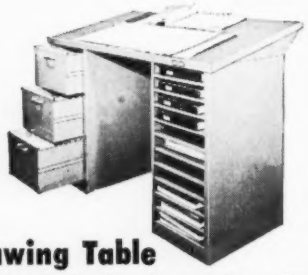
For fast orderly sorting of Trouble-Recorder cards, has 38 card slots in two banks with index strip between. Base is 38" by 8". Height 15". No. D30225-1.

Telephone Office Equipment

to lighten your work and improve efficiency

Work Bench

For repair, assembly, test and paper work. Top drawer divided into 24 compartments for parts and tools. Large file drawers are for circuit drawings. 54" x 25" top covered with masonite. Height 36". Drawers may be inserted from back to reverse position of kneehole. No. D29978-3.



Drawing Table

For circuit drawing in crossbar offices, provides central location for reference material. Masonite top is 30" x 60". Height 36" at front, 42" at rear. Three large file drawers at left for drawings. Eleven shelves at right are 2½" high, 14" wide, 18" deep for sketches, sequence charts, book type SD sheets, trunk serials, etc. No. D30326-1.

Color of all units: Baked-on gray enamel unless otherwise specified.

TWIN POST

Neubauer

MANUFACTURING CO.

517 LOWRY AVENUE N.E.

MINNEAPOLIS 18, MINN.

San Angelo in its public relations department since early 1954.

Mr. Davis has been in the telephone business for about 20 years, serving about 10 years with the Southeast Missouri Telephone Co., and for the past 10 years with Southwestern States. Most of his tenure in telephone business has been in the directory field.

Appointed public relations director last August when a separate company was organized to handle directory compilation and production for Southwestern States, Mr. Davis has continued to coordinate handling of directories between the two companies.

Mr. Davis has organized and will head the Independent Telephone Directory Co. which will maintain general offices in Corsicana, Tex.

Party-Line Hogging Adds to Losses from Two Fires

A rural family of seven, living near Duluth, Minn., was homeless because a neighbor refused to give up the party telephone line so the mother could call the fire department, the United Press reported on Mar. 5.

Flames broke out in the Edward Shatto home. Mrs. Shatto said when she tried to call the fire department, neighbors on the line refused to give it up.

Firemen arrived too late to save the two-story dwelling. They said if they had been notified a few minutes earlier the house probably would have been saved.

Minnesota has a law making it illegal for a person to wilfully refuse to relinquish a party-line telephone when it is needed for an emergency call.

•

Fire also caused serious damage to an Ogden, Utah, residence on the afternoon of Mar. 3 when a woman refused to give up a party line so the home owner could call the fire department.

Robert L. Wilhelm said he discovered his six-year-old son, Bobby, had been playing with matches in the basement and set fire to some paper in a closet.

Mr. Wilhelm rushed to the telephone, but found it was busy.

He pleaded with the woman on the party-line to let him call the fire department, but she refused, apparently thinking it was a ruse to get the line.

He said he argued and pleaded for several minutes, then ran across the street and used a neighbor's telephone to call the fire department.

Firemen said the minutes lost added considerably to the damage.

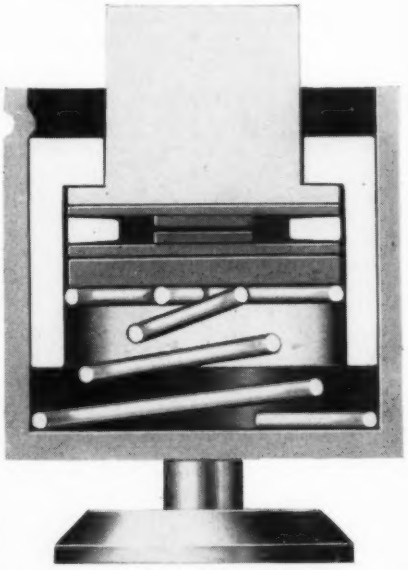
The boy escaped from the basement room and was not hurt.

We Don't Think It's Necessary

In the design and manufacture of the new Mytigap arresters, however the replacement of parts and reassembly in the field by operating company maintenance and repair crews has been incorporated.

The use of Spark Plug characteristics in the design of this arrester provides a durability and reliability which in our opinion obviates the necessity of replacement and reassembly of the Mytigap. You don't reassemble your spark plug with replacement parts.

Nevertheless in the interest of further economy and for competitive reasons, the come apart feature together with capsulated subassemblies has been provided for.



Sectional View of the 41-450 Assembled Mytigap Arrester for Stranterm Protection.

So, for the first time a lightning, surge or power cross arrester all in one, with self-restoring operation after functioning, for Cook Stranterm, PLX and RDX cable terminals is now available. An arrester with spark plug electrodes,—Ceramic insulation like your automobile spark plug—made of Cecotite, (a Zirconeum base ceramic made exclusively by Cook Electric Company) and replacement parts which can be individually field serviced and reassembled will introduce further plant protection economies.

For literature, samples, and additional information contact your nearest distributor or telephone supply salesman.

ADVERTISEMENT

AMA Publication Discusses Promotion of Research

How can the serious shortage of scientists and engineers be alleviated? What can be done to utilize available research personnel to maximum effectiveness? How can potential scientific talent be trained to contribute their much-needed skills to company operations?

Representatives of Bell Telephone Laboratories in a new publication, "Strengthening the Research Effort," give specific answers to these questions.

Other papers discuss how to strengthen the motivation of industrial research personnel (National Cash Register Co.) and how the technical director can successfully participate in the top management of his company (Argus Cameras, Inc.).

This 63-page volume is available from the American Management Association for $1.75 ($1.00 for members).

Long Distance Network to Link Seattle and Vancouver

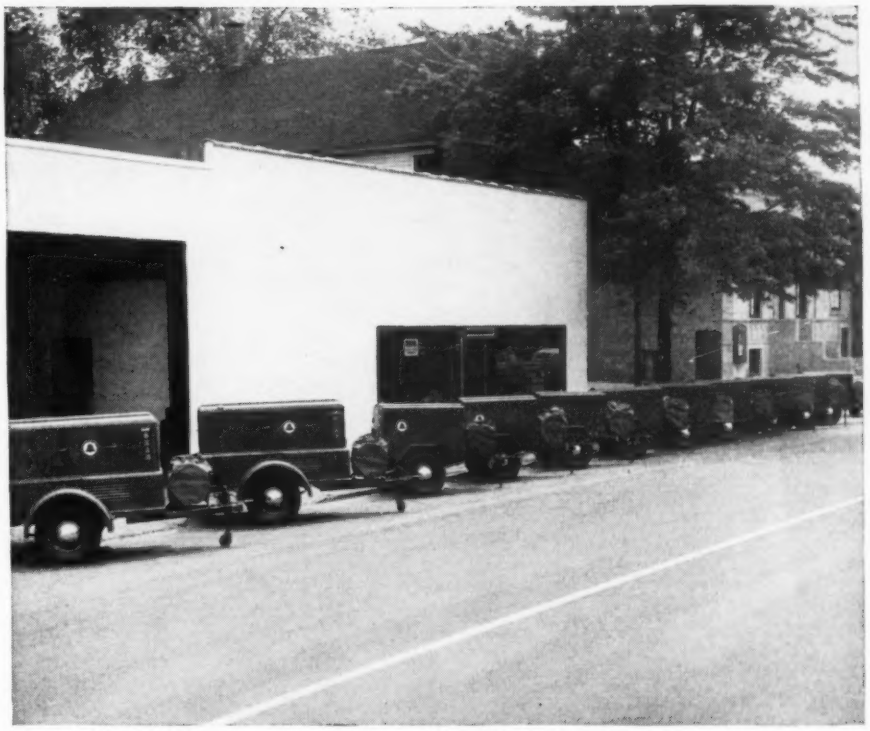
Details of a new long distance telephone network between Seattle and Vancouver, British Columbia, were announced recently by Pacific Telephone & Telegraph Co. and B. C. Telephone Co. The system, to cost an estimated $1,560,000, will use high frequency microwave radio to transmit long distance calls.

The system is a joint undertaking between the two companies. Long distance calls will leap-frog from mountain top to mountain top in six major jumps from Vancouver to Seattle. Steel towers with huge antennas will be located at Rattlesnake Ledge near North Bend, Bald Hill near Everett, Devils Mountain near Mt. Vernon, Lookout Mountain at Bellingham and at Thorne Hill, near Haney. At Haney, the north-south system will tie into the new trans-Canada microwave network now under construction.

W. S. Pipes, vice president and general manager of B. C. Telephone, and Ben Bowling, vice president and general manager of Pacific Telephone's Washington-Idaho area, said the system is expected to be in operation by June 1958. Final engineering work is still in progress for the Washington portion of the system.

Work has already begun on the terminal equipment in Vancouver on top of the British Columbia Telephone Co.'s main downtown building. Work is also in progress at the Haney junction point.

Construction of buildings and towers at the Devils Mountain and Lookout Mountain sites is expected to begin this summer. Existing towers at Rat-



Power insurance . . . on wheels, for the Michigan Bell System

This fleet of eleven trailer-mounted Onan Electric Plants was recently put into service by the Michigan Bell Telephone Company. Self-contained and highly mobile, these gasoline-powered generating units can be rushed to any exchange where an outage of commercial power occurs.

The new fleet consists of six 5KW, three 10KW and two 25KW Onan plants. All are remote starting units generating 115/230-volt, 60-cycle, single-phase current. Each is mounted on a high-speed, 2-wheel trailer with a weatherproof housing that encloses the built-in fuel tank, starting battery, engine-instrument and electric meter panels, and A.C. outlet receptacles. The drawbar supports an extension cord reel.

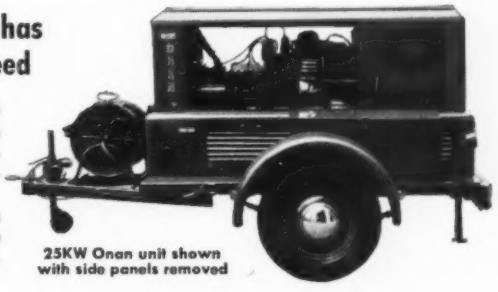
Within minutes after the electric plant arrives at the exchange, it is supplying power to keep telephone service operating.

The Michigan Bell System is one of many companies using Onan Emergency Electric Plants to help assure vital telephone communications at all times, under all conditions.

Trailer-mounted, or permanently installed, Onan has a standby plant for every need

Standby models are available from 1,000 to 75,000 watts. Air-cooled models up to 10,000 watts available with Vacu-Flo air-cooling for installation in areas where ventilation is a problem.

Onan also builds lightweight, portable plants for plug-in electricity on maintenance and construction jobs. 500 to 10,000 watts.



25KW Onan unit shown with side panels removed

See how other companies are using Onan Standby and Portable plants. **WRITE FOR FOLDER.**

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

4051 University Ave. S.E., Minneapolis 14, Minnesota

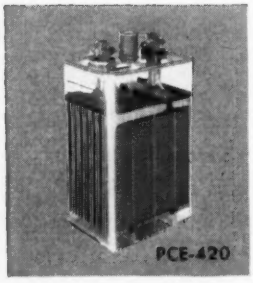
XUM

Telephone batteries engineered for—

25

years of service

C & D PlastiCal®



If you want extra-long life from batteries in telephone service—be sure to specify C & D PlastiCal® batteries.

Here is the original lead-calcium telephone battery that provides at least 40% longer life than conventional telephone batteries. With C & D PlastiCal telephone batteries you get:

- **Reduced maintenance**—Electrolyte level can be checked at a glance; cells require 1/5 as much water as conventional batteries.
- **Lower in-place cost**—Rugged one-piece plastic case is 20% lighter than glass; reduces shipping and breakage costs.
- **Increased safety**—C & D's patented Saftee-Vent eliminates the chance of accidental explosions; serves as funnel for filling.

These plus many other benefits mean that in the telephone field, C & D is—

Your better battery buy!

Literature available

Write for complete description and specifications in C & D PlastiCal Bulletin T-528.

C&D BATTERIES, INC.

of Conshohocken, Pa.

SINCE 1906

SALES AND SERVICE OFFICES IN PRINCIPAL CITIES FROM COAST TO COAST

tlesnake Ledge and Bald Hill, constructed as a part of the Port Angeles-Seattle microwave system, will be utilized for the Seattle-Vancouver route, also. Messages traveling over the route will go an estimated 175 miles.

The system will contain two channels, one for regular operation and the other a standby or protection channel. Each channel will carry 120 simultaneous conversations or could serve as a television transmission channel.

Design of the system provides for automatic switching. If one channel fails the other would automatically go into operation.

Initially the new network will have no facilities for dropping traffic off at intermediate points such as Bellingham, but it is designed so that if such service is needed, it can be established.

Bowling and Pipes said that early work on the project began in the summer of 1955, when a five-man crew made its initial route survey. The final route determination was made after additional tests were conducted last summer.

The construction schedule anticipates the system will go into operation at the same time the trans-Canada network is opened to traffic.

Church Services Brought To Shut-Ins Via Telephone

Regular services from the First Church of God in Middletown, O., are now brought to invalids and elderly people confined to their homes.

It's all done through a unique setup involving the church, the telephone company and a radio technician.

The telephone company provides a circuit from the church to the central

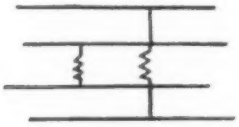
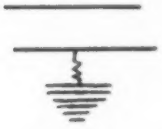
GIVE

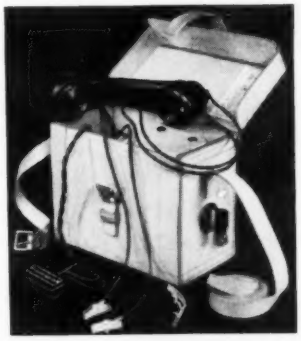
EASTER SEALS

HELP

CRIPPLED CHILDREN

National Society
for
Crippled Children and Adults
11 So. LaSalle Chicago 3

Once upon a time there was a little telephone line. He was very high strung and lived far out in the country. During a storm he became very ill: he developed a short, a cross,  and a ground.  Even his feathered friends avoided him. When the storm was over, a man appeared carrying a small leather case, and in no time at all the little telephone line was well again, happily carrying calls. He's still puzzled, though, how the man found his troubles so quickly. You see, he doesn't know about West Test Set.



Moral: To find line troubles fast - use WEST TEST SET

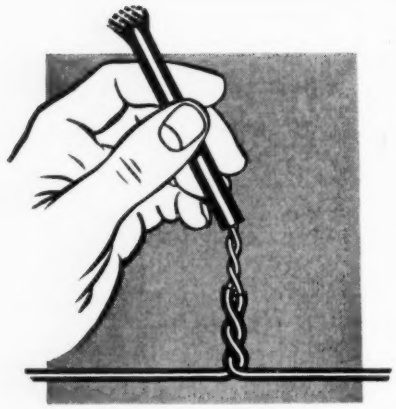
With a West Test Set, one man can clear up miles of line trouble in just one day. More and more companies are using West Test Set for trouble shooting on all types of circuits, and as portable telephones. Write today for full details. *Address: Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

ORIGINATORS OF THE DIAL TELEPHONE

XUM

Superior's "Super-Splice"® is safe and sure!



"Super-Splice" makes splices waterproof . . . from inside out!

Sealed at one end, this plastic splice sleeve is filled with an insulating and waterproofing compound.*

Economical "Super-Splice," a Superior exclusive, makes the splice permanently as good as the cable . . . yet it can be re-entered easily. The compound never hardens or oozes out no matter what the temperature.

Prevent leakage currents and breakdowns in the presence of moisture...good for 25,000 v.d.c. Order "Super-Splice" NOW!

*A Dow-Corning silicone compound.

An REA Standard.

"Super-Splice" is available for use with straight, butt or bridge splices.

For further information on economical "SUPER-SPLICE", write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
Hickory, North Carolina

office and circuits from the office to the various homes. The church provides the microphone and the loudspeakers in homes.

Speakers have been installed in 17 homes enabling scores of people to feel a part of their church by never missing a service.

Both the circuit changes and monthly maintenance expenses of the loudspeakers are paid by the church.

So far as is known, this is the only church in the United States furnishing such a service.

Ohio Company Asks Increase

The United Telephone Co. of Bellefontaine was scheduled to present its case on Mar. 12 in support of its request for a $295,000 annual rate increase before the Ohio Public Utilities Commission.

OKs Minnesota Purchase

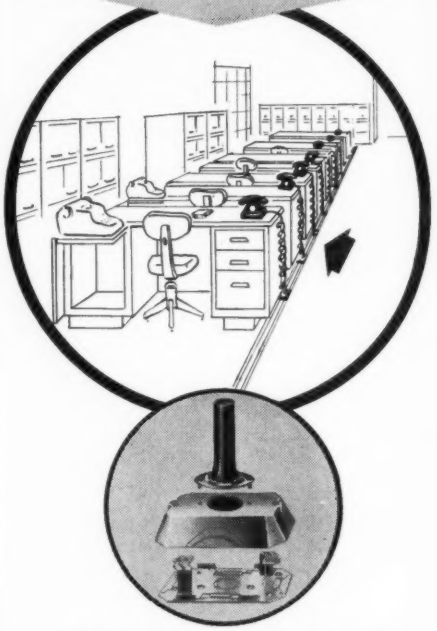
The Minnesota Railroad & Warehouse Commission on Feb. 25 authorized the Pineland Telephone Co., McGregor, to purchase the McGrath Telephone Association. The McGrath company serves 150 stations.

Authorizes Minnesota Sale

The Minnesota Railroad & Warehouse Commission on Mar. 8 authorized the Chisago City Telephone Co. to purchase the Stacy Telephone Co., which serves approximately 165 local and rural stations.

Charles L. Morrison has recently been assigned the duties of general plant extension engineer for the General Telephone Co. of Kentucky, according to an announcement by H. J. Huether Jr., president of the company. Mr. Morrison started his telephone career with the General System in 1946.

PANCAKE is the Modern Way to carry communications wiring to the *point of use!*



Pancake is the streamlined, modern method of making individual telephone connections to office desks or communication points in factories. The galvanized steel, *trip-proof* surface raceway can be quickly and economically installed with a *minimum* of interruption to office or factory routines.

Features added to the newly developed 1546T Telephone Outlet Box, *illustrated above*, provide (1) an ingress for 2600 Pancake, and (2) the "split bridge", which extends the versatility of this fitting, provides a more simple means for the installation of the 47B terminal block, and facilitates the use of the fitting for through wiring.

Specify 1500 Pancake for JKT Conductors; 2600 for telephone cable.

For further information write Dept. T-4

THE WIREMOLD COMPANY
HARTFORD 10, CONN.

REA Proposes Telephone Loan Equity Requirements

The Rural Electrification Administration on Mar. 4 outlined proposed changes in equity and security requirements which it is considering for rural telephone loans. The proposed policies were discussed by Administrator David A. Hamil in a talk before the annual meeting of the National Telephone Cooperative Association in Chicago on Mar. 2. Mr. Hamil said that no effective date has been set for the changes.

The proposed policies are summarized as follows:

(1) *For commercial-type borrowers:*
(a) Commercial-type borrowers will be required to provide 10 per cent equity as appraised by REA. They will normally be expected to raise any new equity funds required prior to the advance of loan funds. Where at least 50 per cent of the required new equity funds is raised, REA may permit loan advances if the borrowers accept additional managerial controls in their mortgages whenever their net worth is less than 10 per cent.

(b) For all new and supplemental loans the mortgage will prohibit payment of dividends or other distribution of net worth, if after such payments, net worth will be less than 10 per cent of assets. These terms will be defined in the mortgage.

(c) Present borrowers who have raised at least 50 per cent of required equity funds may obtain loan advances if they accept a supplemental mortgage containing the dividend restrictions and other managerial controls.

(2) *For non-profit borrowers:*
(a) Non-profit type borrowers will be required, prior to the loan, to have existing subscribers and signed applicants amounting to at least 70 per cent of the five-year subscriber estimate and to collect $10 for each unserved signed applicant.

(b) For all new and supplemental loans the mortgage will include managerial controls and restrictions on any distribution of net worth if, after such distribution, net worth will be less than 10 per cent of assets. These terms will be defined in the mortgage.

(c) Present borrowers having difficulty raising equity may (1) request waiver of the requirement of raising the remaining equity and in lieu thereof accept the mortgage provisions of "b", or (2) request approval of a time payment plan of raising the remaining equity.

Vote to Sell Ill. Company

Stockholders of the Industry Telephone Co. voted on Feb. 26 to sell their company to the McDonough Telephone Cooperative, Macomb. The Industry telephone system serves over 600 customers.

New Model YLW-96 Body with Hydraulic Derrick and Digger by YORK-HOOVER

INVEST IN THE YORK-HOOVER YLW-96 FOR SERVICE ECONOMY

DESIGNED FOR 2 MAN OPERATION

FAST OPERATING DERRICK AND DIGGER

DERRICK EQUIPMENT HANDLES 45' POLES

A completely equipped line body with hydraulic derrick and digger located for either front or rear operation.
The hydraulic derrick has been "field proven" with hundreds in daily operation. It incorporates the expanding center leg principal with lifting capacity limited only by the chassis stability.
A pressure type hydraulic digger designed to work in those "hard to get at" places, stows with the derrick when not in use.
Modern—proven—efficient—get the complete story on the York-Hoover YLW-96 unit.

BODY DIVISION
YORK-HOOVER CORPORATION
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Creative Engineering for the Public Utility Industry Since 1892

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Murphy "ONE-MAN" Cable Tester

MODEL TTB

MODEL CMUW

ONE MAN WORKING ALONE

Can Now Identify Non-Working Cable Pairs 3 times faster than 2 men working together.

DISTANCE:
2 feet to 40 miles

The *Combination Tag-and-Terminating Board*, showing cable pairs properly connected. Tips — Horizontally, RINGS—Vertically.

The NEW MODEL CMUW
The new weatherproof gasket sealed case is now a part of every MODEL C shipped.

WE SELL DIRECT ONLY TO DOMESTIC CUSTOMERS
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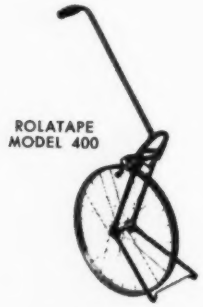
4419 Tulsa **Houston 24, Texas**



ROLATAPE MODEL 400

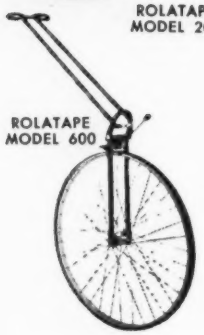
ROLATAPE is the Fast, Efficient, Economical Modern way to measure. Model #400 is widely used by Road Construction Companies, Telephone Companies, Utilities, Sewage Departments and many other industries where measurements are important.

MEASURING time is cut to a fraction with Rolatape. Model #200 is extremely popular with Real Estate Men, Appraisers, Traffic Officers and many others who demand fast, accurate, measurements.

ROLATAPE MODEL 200

WHEELS on all Rolatapes are precision calibrated, and can be depended upon for long-life service. Model #600 is a special model for long-distance, acreage measuring and for use over rougher terrain.

FOR FAST, ACCURATE measuring—Rolatape Measuring Wheels are the answer. Models #400 and 600 measure distances up to nearly nineteen miles.



ROLATAPE MODEL 600

MEASURING is simple, time-saving, and efficient when you use a Rolatape. FOR COMPLETE DETAILED ROLATAPE INFORMATION, SEE YOUR DEALER, DISTRIBUTOR, OR WRITE TO:

ROLATAPE, INC.
Factory: 1741 Fourteenth Street, Santa Monica, California

Iowa-Illinois Independent Buys Central Exchanges

Iowa-Illinois Telephone Co., New London, Ia., a General Waterworks Corp. subsidiary, has purchased properties from Central Telephone Co., serving 7,000 subscribers in Iowa and North Dakota, according to Howard Butcher III, president of the parent company.

He added, in a statement reported on Mar. 7, the purchase was financed with part of a $5,667,000 loan authorized in January by the Rural Electrification Administration for the Iowa-Illinois company.

He said the newly-acquired properties, plus expenditures to be made for rehabilitation, extensions and conversion of the entire Iowa-Illinois system from manual to automatic operation will add about 4.5 million dollars to its property account.

The balance of the REA loan, he said, was used to refinance bonds and notes and for other corporate purposes. Before the acquisition, Iowa-Illinois had assets of 3.6 million dollars and served 8,600 customers.

REA Names R. T. Beall To Administrative Post

Robert T. Beall has been designated acting assistant administrator for administration in a realignment of functions within the Rural Electrification Administration, the U. S. Department of Agriculture announced on Mar. 8.

REA Administrator David A. Hamil said that two organization changes have been made "for administrative efficiency and maximum support of efforts to extend and improve electric and telephone service in rural areas." These are:

(1) Creation of the new position of assistant administrator for administration to supervise and direct the four present administrative staff divisions — administrative, administrative and loan accounting, information services, and personnel.

(2) The responsibilities of two present positions of assistant administrator for program activities, in the office of the administrator, have been enlarged so that either assistant administrator will direct all program activities when the other is absent. J. K. O'Shaughnessy directs the telephone program and R. G. Zook the electrification program.

McHugh to Carrier Board

Keith S. McHugh, president of the New York Telephone Co., was elected to the board of directors of Carrier Corp. at the recent annual meeting of stockholders held in Syracuse, N. Y.

LOOK TO THE LEADER...

for
- RELIABILITY
- SERVICE
- NATIONALLY KNOWN TELEPHONE SUPPLIES

Prompt delivery of your order as specified is assured by Lindsay's fast, efficient, personalized service. Lindsay specializes in telephone supplies *only* . . . warehousing a complete line of the finest nationally known brands . . . your guarantee of the best as you want it . . . when you want it.

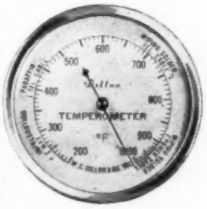
LOOK TO LINDSAY

THE LINDSAY TELEPHONE SUPPLY CO., *Est. 1939*
10409 Meech Ave., Cleveland 5, Ohio • Telephone Diamond 1-9212

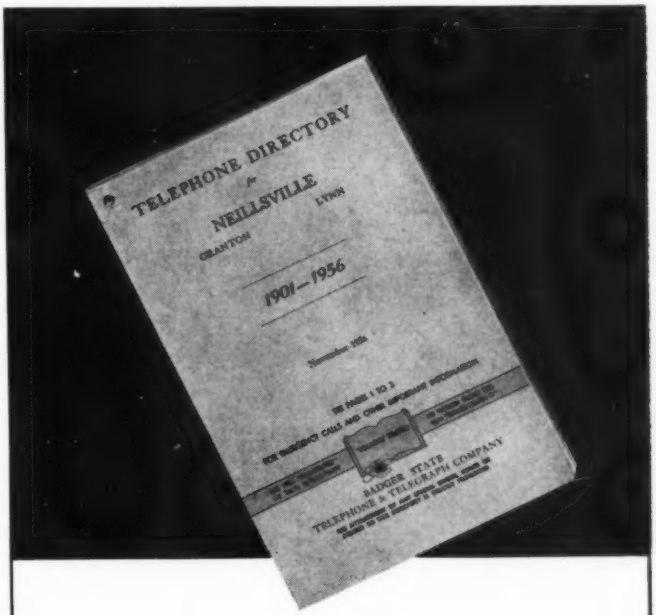
IT'S TRUE

Accurate temperature measurement of wiping solder, impregnation wax, paraffin, etc. IS an absolute must if porous cable joints are to be avoided! An inexpensive Dillon Temperometer reveals exact pot temperature at a glance. Dial is marked with recommended points for various compounds.

Stainless steel construction outlasts ordinary glass thermometers many times over. Has 8¾" stem length, 2⅜" dial diameter. Reads from 200° to 1000° Fah. Comes with handle. Countless thousands in use by leading telephone and utility companies, also by U.S. Signal Corps. Shipment by parcel post from stock or may be ordered from leading jobbers. Write for illustrated bulletin. No obligation.



W. C. DILLON and CO., INC.
14628AT Keswick St., Van Nuys 55, Calif. (Suburb of Los Angeles)

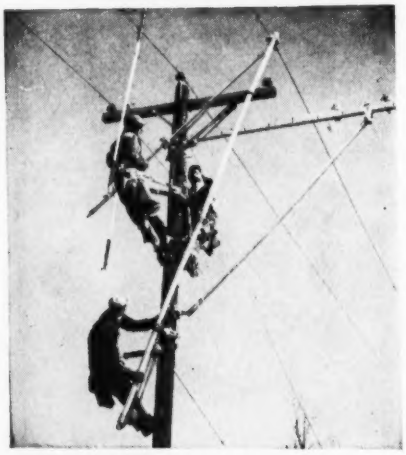


A directory for the
Badger State Telephone & Telegraph Company, Wisconsin
printed by

R. R. DONNELLEY & SONS COMPANY

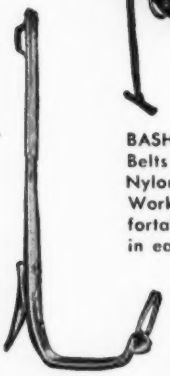
350 East Twenty-second Street, Chicago 16

Basklin's
Quality
FOR OVER 30 YEARS



TOOLS OF SAFETY . . .

BASHLIN Quality Body Belts with the additional Nylon Safety Feature . . . Work Safely . . . Comfortably . . . with tools in easy reach.



BASHLIN Quality Alcoa Aluminum Alloy Adjustable Climbers with replaceable gaffs . . . There is nothing better anywhere!

BASHLIN'S Nylon and leather Safety Straps . . . Bashlin Quality, of course.

You Can't Afford Anything LESS Than the BEST—
Buy BASHLIN
Highest Quality For Over 30 Years
Distributors in Strategic Areas in U.S.A.
EXPORT: Copperweld Steel International Co.
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Ask for . . .
CATALOG NO. 156

W. M. BASHLIN CO.
GROVE CITY, PA.

Three new staff engineers have been added to Automatic Electric's carrier and radio sales division: James Rice (above, left), Robert D. Martin (above, right) and James Strickland, all of Chicago. Rice and Strickland formerly held positions with AT&T. Martin was with the Illinois Bell Telephone Co.

Western Electric to Build Columbus, O. Factory

The Western Electric Co. on Feb. 20 outlined plans for construction of a 50-million-dollar factory on the eastern edge of Columbus, O., for the production of telephone equipment.

A spokesman for the company said the new plant would employ approximately 4,000 persons. He said the company had acquired options to purchase about 250 acres of farmland.

What's Wrong with Profits?

"Technology is increasing at a more rapid rate than ever before. If we don't have too much interference we'll have progress. The great increase in population will require larger manufacturing and service plants, just to keep our present standard of living. Yet, nobody will be satisfied just to keep it as it is today. How are we going to finance this progress? The answer is through profits. Yet it seems to be good politics in this country to be against business and against profits. The public at large—the voters—are being led to believe that there is something bad about profits. We think that profits are the heart and the soul of our progress. If we don't have the profits, we are not going to have the progress."—CRAMER W. LAPIERRE, *executive vice president, General Electric Co.*

Seeks Self-Determination

"Every small deed of faith in the American people's ability to run their own lives is like a candle casting its mellow beams through the stormy night." — HOLMES ALEXANDER, *columnist.*

Name Graybar Manager

John Reine, central district manager of the Graybar Electric Co., Inc., has announced the appointment of J. A. Reagen as operating manager at Green Bay, Wis., effective Mar. 1.

BEST TRANSMISSION VF/CARRIER

COPPERWELD LINE WIRE

NEW — Gov't Surplus
250,000 lbs. — Save 25%

#12 AWG (.080) 40% Conductivity
High Strength — Original Coils (100 lbs. Ea.)

Export Wrapped (100%) 40c lb.

Domestic Wrapped (Slight Tarnish) 35c lb.

Material origin same as previously sold in Los Angeles area and Salt Lake City.

Personal inspection invited. Reimburse one way transportation upon minimum order of 5 ton.

Sample on Request
Delivery Guaranteed Per Sample
Freight Allowed 10 Ton Minimum

BUCHMAN MATERIALS CO.

725 SO. WESTLAKE AVE., LOS ANGELES, CALIF.
References: Bank of America—Dunn & Bradstreet

Ruling Principles of Utility Regulation

RATE OF RETURN

by Ellsworth Nichols

—the book you've been waiting for

500 pages
$15.00

One of the most important subjects, if not the ***most important subject***, constantly confronting utility managements, regulatory commissions and others concerned, is the ***amount of return*** to be ***allowed public utility companies*** and ***how best*** to ***determine that return.*** After almost four years of research, study, and analysis, Ellsworth Nichols, Editor of PUBLIC UTILITIES REPORTS and author of other publications on regulation, has completed his new volume ***"RATE OF RETURN."***

Published by Public Utilities Reports, Inc. *and kept up-to-date by periodic pocket supplements.*

Throughout the work, emphasis is placed on the ***ruling principles of courts and commissions*** concerning the ***various factors to be considered, the weight to be accorded such factors,*** and ***illustrations*** of the ***application*** of the ***principles discussed.***

The volume contains 25 chapters, each dealing with an important phase of the subject.

Send All Orders to

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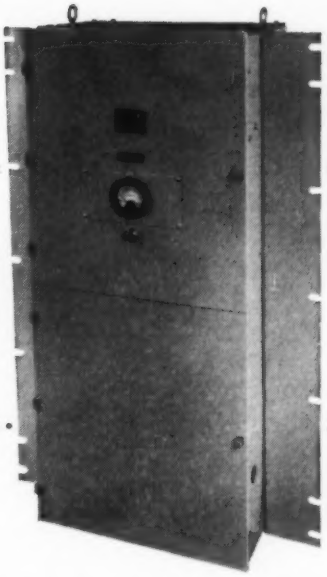
608 South Dearborn Street **Chicago 5, Ill.**



NEW

RAYTHEON 48 VOLT BATTERY CHARGERS

with these

3 IMPORTANT ADVANTAGES

1. ***Magnetic amplifier control*** of both input and output with no-load to full-load stabilization. No tubes.
2. ***No audible hum*** at output terminals—Improved filtering of output circuit. Automatic compensation for rectifier aging.
3. ***The most compact unit*** on the market—Completely re-designed cabinet, for wall or rack mounting.

RECTICHARGERS® NOW AVAILABLE for immediate delivery from stock. 6, 12 ampere (single-phase); 25, 50 ampere (3-phase)—48 volts. In stock by January 1957 —3, 25 ampere (single-phase); 100 ampere (3-phase); 6, 12, 24 ampere constant current models. *See your telephone supplier.*

Free! **A new folder describing the 48 volt line. Diagrams, specifications, other information you can use.**

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RAYTHEON

Please send me 48 Volt Recticharger bulletin No. 4-300 —without charge or obligation.

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Company_____

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CLAY CONDUIT

The proved and standard protection for Underground Telephone Cables. Highest quality and full line of shapes.

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HALEY
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Light in weight and clean. PENTAchlorophenol treated in our modern plant for protection against decay, moisture and insect damage.

TWO strategically located yards:
MINNEAPOLIS, MINNESOTA
FINDLAY, OHIO

R. G. HALEY & CO., Inc.
SPITZER BUILDING
TOLEDO 4, OHIO

IMMEDIATE DELIVERY

Stromberg-Carlson Appoints Two to Sales Force

David K. McNish and Edward J. McGuinness have recently been appointed to positions with the telecommunication sales force of Stromberg-Carlson, a division of General Dynamics Corp., in a move to augment service to customers in two areas, according to T. C. Thompson, general sales manager for the telecommunication division.

D. K. McNISH

Mr. McNish will be the sales representative in the states of Virginia, eastern Tennessee and northern Georgia; Mr. McGuinness will be carrier/microwave sales engineer for the states of New York, New Jersey, Pennsylvania, Ohio, West Virginia and New England.

David McNish spent his early years in Fulton, Paducah, and Ashland, Ky.; was educated at Marshall College and Washington and Lee University; and began his telephone career in 1934 by returning to Ashland for a position in the plant department of the Home Telephone Co.

During World War II Mr. McNish served with the Signal Corps in the Philippines and other sections of the Southwest Pacific Theater, and received a Bronze Star. He was released from service in 1945 with the rank of captain. Joining the Southern Bell Telephone & Telegraph Co. in Knoxville, Tenn., he transferred in 1947 to the Chesapeake & Potomac (Bell) Telephone Co. of Virginia as manager of its Salem, Va., office. Progressing through other managerial posts with this company in Danville, Norfolk and Richmond, Mr. McNish was appointed district commercial manager for Richmond in 1953.

In 1955 he became associated with a company manufacturing sound-powered telephone instruments and importing a line of central office equipment, serving as sales manager until joining the Atlanta branch of Stromberg-Carlson Co. in January 1957.

E. J. McGUINNESS

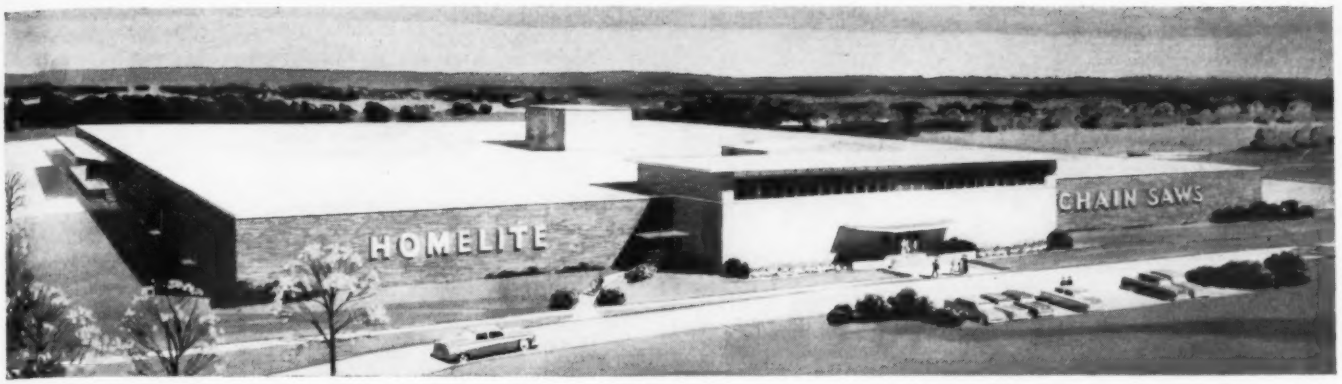
David McNish is a telephone man both by personal experience and by tradition. He is a son of Kelly McNish, president of the Intermountain Telephone Co. of Bristol, Tenn.

Edward McGuinness was born in Utica, N. Y., and has spent most of his life in the Empire State. He enlisted in the U. S. Navy, was sent to radar school at Virginia Beach and then shipped out as radarman for a Southwest Pacific assignment. During his two-year tour of duty he accumulated five major battle stars.

In October 1946, Mr. McGuinness took a position with the Syracuse district of Western Electric Co. Among his major assignments was the installation of 4A Toll equipment for the Syracuse regional center, intertoll dial positions at Utica, and television station equipment at Cherry Valley, N. Y. While employed by Western Electric he qualified for additional training at Bell System schools.

Subsequently Mr. McGuinness held a position in the plant department of the General Telephone Co. of Upstate New York for five years prior to joining Stromberg-Carlson. In this post he became familiar with various phases of equipment operation—manual, dial, PBX and carrier—for the entire Central Adirondack region. During this time he also took extension courses at Cornell University.

Joining Stromberg-Carlson in March 1956, Mr. McGuinness became a member of the carrier/microwave national sales engineering group until his present assignment to the Rochester branch.



Homelite, a division of Textron Inc. of Port Chester, N. Y., has announced ground breaking for a new, modern chain saw plant in Gastonia, N. C. Ceremonies were attended by many state and local dignitaries and several Homelite representatives, including Richard C. McDonald, vice president—manufacturing; J. Howard Maxwell Jr., sales promotion manager; Philip Corbett, sub-contract manager and Clarence E. Stevens Jr., newly appointed works manager at Gastonia.

Gives Objective View Of Automation

The *Chicago Sun Times* recently commented as follows on a talk given by the president of Illinois Bell Telephone Co., William V. Kahler:

"The word 'automation' has scared a lot of people. But not the fellow who had this advice to offer:

" 'Don't be worried,' he said, 'about these mechanical brains making man obsolete. Like all other great inventions—from the cigaret machine to television—they still need somebody standing by to give them a kick when they fail to work.' "

Government in Business

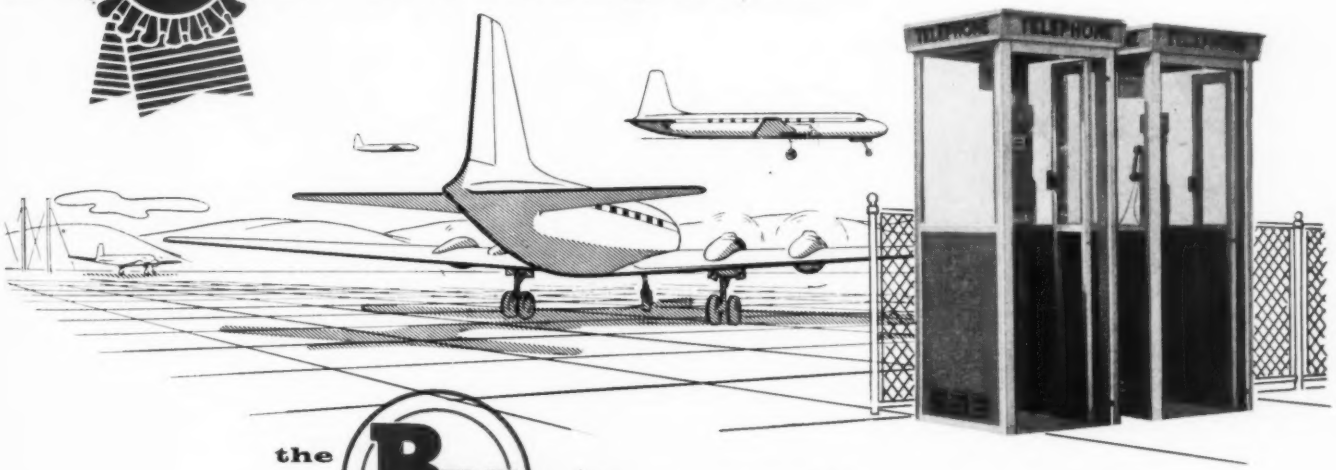
"If the real objectives of these advocates of statism were to be realized there would be government monopoly of the electric industry in the atomic age. . . . We in the electric business are well on our way to solving the nuclear problems of our industry."—N. R. SUTHERLAND, *president, Pacific Gas & Electric Co.*

AE International Opens New European Headquarters

Automatic Electric International has established a new European headquarters in Geneva, Switzerland. The new office has consolidated the activities of International Automatic Overseas, S.A., Brussels, and International Automatic Electric Sales Co., S.P.A., Rome, which have been deactivated.

The new office will supervise the sale in Europe and adjacent areas, including the Near East and most of Africa, of the products of the Automatic Elec-

BEST for airports



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attracts the eye day or night,
promotes more revenue. Colorful, clean, sturdy –
the BN Booth is best for you, too!

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Serviceable for all around uses. Standard everywhere.
NYLON
Smooth texture, easy to handle. Preferred for switchboard use.
NEOPRENE
Very popular because easy to keep clean. Moisture and grease proof.

Runzel

CORDS

the WORLD'S FINEST

...for every purpose!
...for every instrument!

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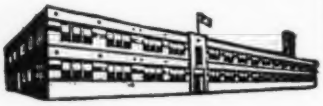

tric group factories in the United States, Canada, Belgium and Italy. Automatic Electric International also is the export distributor for Lenkurt Electric and many other companies.

Col. Julian Dobrski, a director and vice president of the company since 1949, will head the new office as European director. Born in Italy, Colonel Dobrski was educated in France and Switzerland and has traveled extensively in Europe and the Middle East

COL. JULIAN DOBRSKI

as a business executive. During World War II he served as a British army parachutist and guerilla warfare officer in the Mediterranean area.

Other executives in the new office include Vice Presidents F. C. Chevalier and A. de Bondini, and Staff Engineer M. Benedetti. Mr. Chevalier, a native of Chicago, received his bachelor and master degrees at the University of Paris and additional electrical engineering training at Ecole Superieure d'Electricitie, in Paris. He joined Automatic Electric in 1926 and has served as a staff engineer and sales repre-

F. C. CHEVALIER

M. BENEDETTI

sentative in the Mediterranean area and the Middle East. A lieutenant colonel in the Army Signal Corps, he served as a liaison officer with the French forces in World War II.

Mr. de Bondini, who also saw war service with the Signal Corps, first joined Automatic Electric in 1932 and has represented the company in Italy,

R. F. WHITE

China, Colombia, Belgium and France. Mr. Benedetti received his electrical engineering education in Italy and joined the company in 1951.

Robert F. White has been promoted to manager of Automatic Electric International's carrier and radio sales division. Mr. White joined Automatic as a staff engineer in 1954, after supervising large-scale Lenkurt and carrier installation operations at the U. S. Navy Air Missile Testing Center, Point Mugu, Cal. His almost 30 years of communications engineering experience includes 20 years in Central America.

Mr. White is a member of the Institute of Radio Engineers and the American Radio Relay League.

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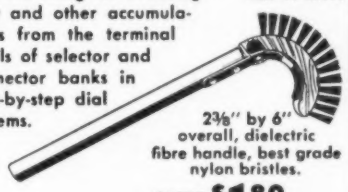

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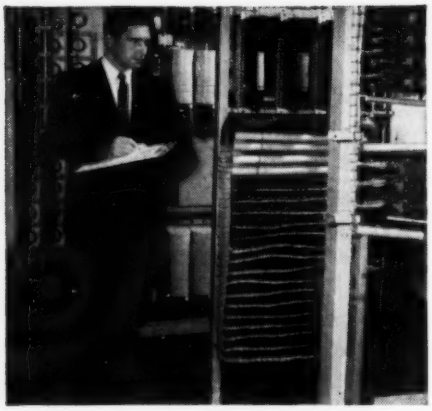

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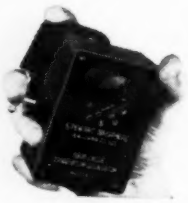

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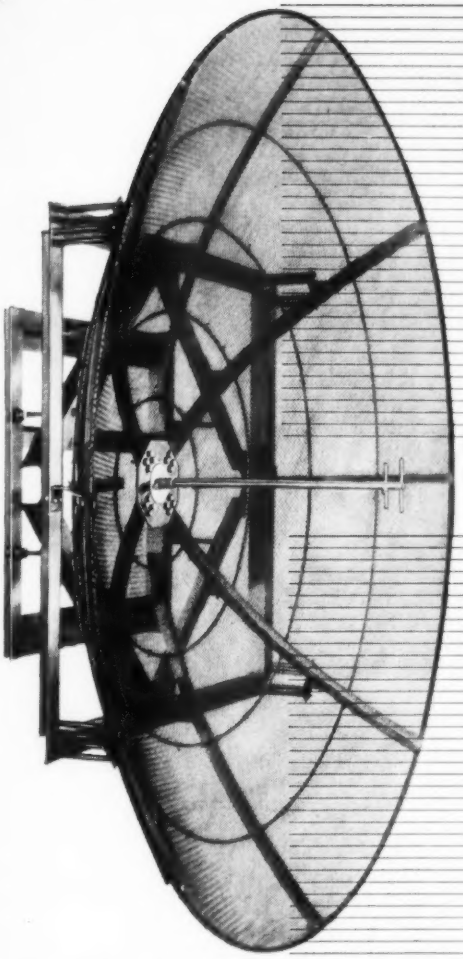

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